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ABSTRACT

This student workbook is intended to be used by secondary students in a basic course in agricultural production and recordkeeping. The student workbook contains the following items for each of the 22 units of the course: objective sheets, information sheets, assignment sheets, and job sheets. Objective sheets include an introduction, prerequisites, two focus assignments--prereading and writing, unit objective, and specific objectives. Information sheets provide important content essential for meeting the objectives. Job sheets give students step-by-step procedures for performing manipulative or psychomotor occupational tasks or jobs. The 22 units are organized in sections that cover the following: (1) orientation and safety; (2) leadership and Future Farmers of America; (3) supervised occupational experience programs; (4) animal science; (5) plant science; and (6) agricultural mechanics. (KC)

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CE 069 451

Agricultural Education I

Second Edition

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CIMC

Student Workbook Part I

95-011512

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Oklahoma Department of
Vocational and Technical Education
1500 West Seventh Avenue
Stillwater, OK 74074-4364

AG3001

Agricultural Education I

Second Edition

Student Workbook

Part 1

Developed by the
Curriculum and Instructional Materials Center
for the Division of Agricultural Education
Oklahoma Department of Vocational and Technical Education

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OBJECTIVE SHEET

ORIENTATION TO AGRICULTURAL EDUCATION A1

INTRODUCTION

Agriculture in Oklahoma is very important to the overall economic status of the state. In 1991, Oklahoma agriculture approached a 3.8 billion dollar industry. Through study in agricultural education, skills and procedures are learned that will assist in preparation for occupations in the field of agriculture.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Go to your school library and find a weekly news magazine. In that magazine, find an article that deals with agriculture and read it.
WRITING:	Write a short essay on how the information in the news article might affect agriculture in your community.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. State reasons for studying agricultural education.
2. State the purpose of the Supervised Agricultural Experience Program.
3. Distinguish between types of Supervised Agricultural Experience Programs.
4. List benefits of the Supervised Agricultural Experience Program.
5. List responsibilities of an FFA member.
6. List FFA activities.
7. Match FFA contests to their correct descriptions and/or activities.
8. Match FFA degrees to their correct descriptions.
9. State the purpose of FFA Foundation Awards.
10. List local, state, and national awards available through the FFA award program.
11. State the purpose of the FFA scrapbook.
12. Select an FFA judging contest in which to participate. (Assignment Sheet 1)
13. Evaluate requirements for the FFA Greenhand degree. (Assignment Sheet 2)
14. Select an FFA project for the Supervised Agricultural Experience Program. (Assignment Sheet 3)

INFORMATION SHEET

ORIENTATION TO AGRICULTURAL EDUCATION

A1

OBJECTIVE 1

Required Activities/ Resources
- Discussion

Optional Activities/ Resources in Instructor's Guide

State reasons for studying agricultural education.

Start a discussion by asking "What will we study in this class?"

WORDS YOU SHOULD KNOW	
agricultural education	educational program that teaches young people about the science of agriculture and agriculture-related occupations, and prepares them for furthering their education or for entry into the world of work

- increasing national food supply
- improving the nation's economy
- learning skills for an occupation
- learning to select and use agricultural products
- managing and using natural resources
- learning record keeping
- learning public speaking
- conducting meetings using parliamentary procedures

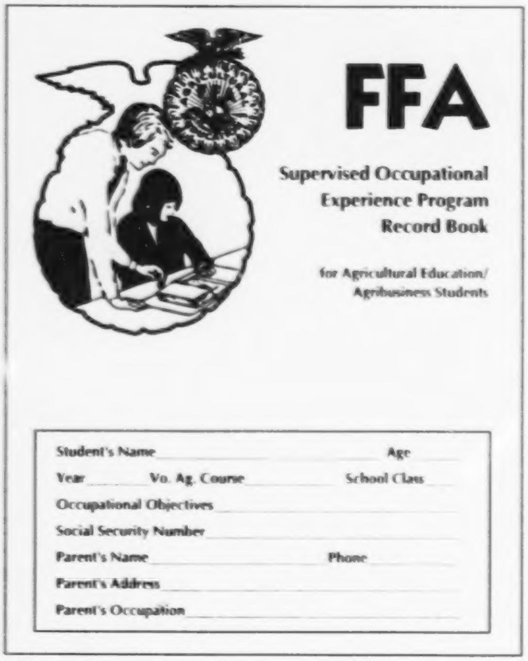
OBJECTIVE 2

State the purpose of the Supervised Agricultural Experience Program.

- to provide a place and an opportunity for agricultural education students to apply the skills they learn in the classroom

  ☑ **NOTE:** The records of these experiences are kept in the *Supervised Agricultural Experience Program Record Book.*

FIGURE 1



FFA

Supervised Occupational
Experience Program
Record Book

for Agricultural Education/
Agribusiness Students

Student's Name __________ Age ______
Year ______ Vo. Ag. Course __________ School Class ______
Occupational Objectives __________
Social Security Number __________
Parent's Name __________ Phone ______
Parent's Address __________
Parent's Occupation __________

Used with permission of National FFA Center, Alexandria, Virginia.

OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

Distinguish between types of Supervised Agricultural Experience Programs.

WORDS YOU SHOULD KNOW	
agriculture	science or art of cultivating the soil, producing crops, raising livestock, and all other aspects created as these products move from producer to consumer
agriculture-related occupations (agribusiness)	industries that support production agriculture EXAMPLES: marketing, processing, servicing, distribution

- Ownership – The student has personal ownership of the materials or other inputs required for the enterprise(s).

  EXAMPLES: production agriculture – student-owned and operated farming or ranching program

  agribusiness – student-owned and operated agricultural enterprises other than production agriculture

- Placement – The student is placed in production agriculture, in agribusiness, in school laboratories, or in community facilities to gain practical agricultural experiences and earn wages.

  ☑ **NOTE:** The students do not own the facilities, equipment, or products but work for wages.

OBJECTIVE 4

Optional Activities/
Resources in
Instructor's Guide

List benefits of the Supervised Agricultural Experience Program.

- financial responsibility
- skill development
- personal recognition
- degree advancement
- preparation for occupation

OBJECTIVE 5

List responsibilities of an FFA member.

Required Activities/
Resources
- Discussion

Optional Activities/
Resources in
Instructor's Guide

You will discuss the specific local FFA requirements.

WORDS YOU SHOULD KNOW	
FFA	National organization for students enrolled in agricultural education programs; designed to provide training in leadership, citizenship, and cooperation and to complement the total agricultural education program.

- regular class attendance
- carrying out a Supervised Agricultural Experience Program
- active membership in the National FFA Organization
- participation in a minimum of five FFA events above the county level for the State FFA degree

OBJECTIVE 6

Optional Activities/
Resources in
Instructor's Guide

List FFA activities.

- FFA meetings
- committee work
- leadership conferences
- contests
- livestock shows and fairs
- state and national conventions
- parent/member banquet
- field trips
- local, state, and national award competitions

OBJECTIVE 7

Required Activities/
Resources
– Read

Optional Activities/
Resources in
Instructor's Guide

Match FFA contests to their correct descriptions and/or activities.

📖 Read OSU's *FFA Interscholastic Meet Rules and Regulations.*

- farm business management – principles of record keeping and accounting, tax regulations, crop machinery and livestock management practices, agriculturai economics, agricultural law and land, labor and capital management
- floriculture – knowledge of identifying specimens by technical and common names, placing classes of floral products, making flower arrangements, planting flowers, taking telephone orders, and making a corsage
- nursery/landscape – knowledge of plant identification, classes of nursery items, general knowledge of nursery/landscape practices and landscape design, potting of nursery crops, and taking a telephone order
- livestock judging – knowledge of breed characteristics, ability to rank classes of animals, and ability to give verbal reasons for animal placement

- meats – grading carcasses, identifying wholesale and retail cuts of beef, pork, and lamb, and making decisions based on visual comparisons
- dairy foods – knowledge of milk flavors, identification of cheeses, detection of flaws in milking equipment, and ability to rank dairy products in order of quality
- poultry judging – knowledge of candling techniques, ability to grade eggs and detect imperfections, ability to grade dressed poultry, and ability to judge and place classes of live production hens and pullets
- agricultural sales – participation in a wide range of activities oriented around the total sales process
- agricultural mechanics – arc and gas welding, hot and cold metal work, plumbing, carpentry, concrete and masonry, electricity, agricultural power and machinery, soil and water conservation
- dairy cattle judging – knowledge of dairy breeds, understanding of production traits, ability to evaluate and place in numerical sequence a group of animals, ability to give verbal reasons for placement of animals, and pedigree evaluation
- crops judging – ability to identify and judge all types of plants and seeds common to the local community and to Oklahoma
- land, range, and pasture judging – ability to identify the various types of soils and land classes and to make land use recommendations
- parliamentary procedure – ability to conduct an effective and efficient chapter meeting according to the correct rules of parliamentary procedure
- public speaking – ability to write and deliver speeches in the areas of natural resources, agricultural policy, agriscience, animal science, plant science, agribusiness, FFA creed, 8th grade agricultural exploration, 9th grade FFA opportunities, and general agriculture
- FFA quiz – ability of freshmen to answer questions that test knowledge of the National FFA Organization
- entomology – ability to identify all types of insects

OBJECTIVE 8

Optional Activities/ Resources in Instructor's Guide

Match FFA degrees to their correct descriptions.

- Greenhand – awarded by a local chapter to the member who is enrolled in the agricultural education program, who is familiar with the aims and purposes of the FFA, who can recite the FFA creed, and who has received a majority vote from the local chapter membership; signifies the achievement of the first level of membership

- Star Greenhand – awarded by the local chapter to the most outstanding Greenhand or freshman student

- Chapter FFA Degree – awarded by the local chapter to a member who has received the Greenhand degree, has completed one year of instruction in agriculture, and has earned at least $150 from a Supervised Agricultural Experience Program; signifies achievement of the second level of membership

- Chapter Star Agribusinessman – awarded by the local chapter to the most outstanding member in the chapter with the best agribusiness Supervised Agricultural Experience Program

- Chapter Star Farmer – awarded by the local chapter to the most outstanding member in the chapter with the best production Supervised Agricultural Experience Program

- State FFA Degree – awarded each year to top 3 percent of FFA members who have:

    - ☐ held the Chapter FFA Degree for at least one year
    - ☐ been FFA members for at least two years
    - ☐ led a group discussion for at least forty minutes
    - ☐ derived an income (net profit) of at least $1000 or accumulated 300 hours from the Supervised Agricultural Experience Program

      ☑ **NOTE:** Of this income, 25 percent may be agricultural occupation, or $250 may be in production and $750 may be in agribusiness.

☐ invested $1000 in an agricultural program

☑ **NOTE:** Investment must be in either production agriculture or agribusiness, or a combination of both, as of January 1, the year the application is submitted. The Production Agriculture State FFA degree stipulates that the labor income must be a minimum of $1000 of which $250 (optional) may be derived from agribusiness. The Agribusiness State FFA degree stipulates that the labor income must be a minimum of $1000 of which $250 may be derived from production.

☐ attained a minimum net worth of $1000 in agricultural investment

☐ received a grade point average of 2.0 overall, with at least a 3.0 grade point average in agricultural education

- District Star Farmer – awarded at the district level to the most outstanding member in a Supervised Agricultural Experience Program, leadership, and scholarship; must have received the State FFA degree
- District and State Star Agribusinessman – awarded at district and state levels to the most outstanding member in agribusiness, leadership, and scholarship; must have received the State FFA degree
- State Star Farmer – Governor's trophy awarded to a member selected from the District Star Farmers; must have received the State FFA degree
- American FFA Degree – awarded to top FFA members in the nation who have been active FFA members for at least thirty-six months, and who have earned at least $7500 from a Supervised Agricultural Experience Program; must have received the State FFA degree
- Regional Star Farmer – awarded yearly to four members in the United States who are selected from the American FFA degree winners in the four national regions
- American Star Farmer – awarded annually at the National FFA convention to the most outstanding FFA member in the nation; must have achieved the American FFA degree

- American Star in Agribusiness – awarded to candidates throughout the nation who hold the American FFA degree, who have been recommended by the state association, and who can:
    - list their career goals in agribusiness
    - describe the agribusiness operation in which they are employed, hold in partnership, or own
    - list and describe five skills or competencies developed through a Supervised Agricultural Experience Program
    - describe their managerial responsibilities
    - provide an annual summary of total hours worked each year
    - itemize agribusiness investments and other resources accumulated

OBJECTIVE 9

Optional Activities/
Resources in
Instructor's Guide

State the purpose of FFA Foundation Awards.

- To recognize FFA members' achievements at local, state, and national levels

☑ **NOTE:** The awards are sponsored by the National FFA Foundation.

OBJECTIVE 10

Optional Activities/
Resources in
Instructor's Guide

List local, state, and national awards available through the FFA award program.

- Individual Proficiency Awards

EXAMPLES: Agricultural Electrification, Agricultural Mechanics, Agricultural Processing, Agricultural Sales and/or Service, Beef Production, Diversified Livestock Production, Wildlife Management, Floriculture, Forest Management, Fruit and/or Vegetable Production, Home and/or Farmstead Improvement, Horse Proficiency, Nursery Operations, Outdoor Recreation, Placement in Agricultural Production, Poultry Production, Sheep Production, Soil and Water Management, Swine Production, Turf and Landscape Management, Cereal Grain Production, Fiber Crop Production, Forage Production, Oil Crop Production, Specialty Crop Production, Dairy Production, Diversified Crop Production, Feed Grain Production, Specialty Animal Production

- Individual Achievement Awards

  EXAMPLES: FFA State Reporter, FFA State Secretary, FFA Wheat King, FFA Peanut Production, Computers in Agriculture

- Chapter Foundation Awards

  EXAMPLES: Bronze, Silver, or Gold Superior Awards, Building Our American Communities, Farm Safety, Food for America

- Scholarship

  EXAMPLE: Santa Fe Railway

- Dairy Breed Association Awards

  EXAMPLES: Jersey, Brown Swiss, Ayrshire, Milking Shorthorn, Holstein

OBJECTIVE 11

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

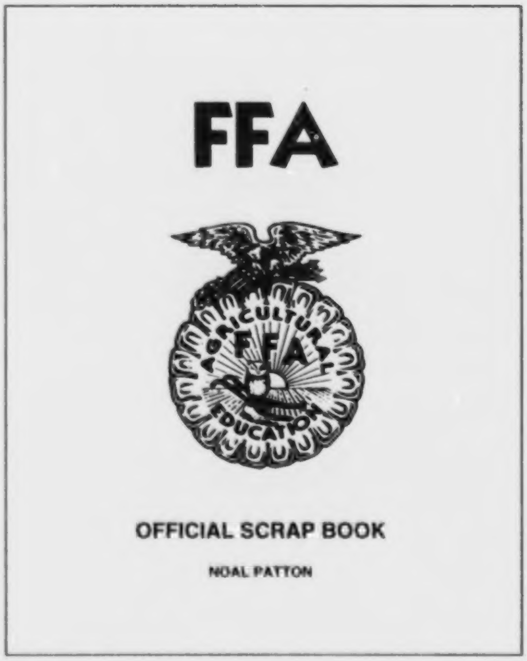
State the purpose of the FFA scrapbook.

Start a discussion by asking "Why is an FFA scrapbook important?"

- To record FFA accomplishments and achievements that describe and verify four years of work in agricultural education

  NOTE: The FFA scrapbook is required for all State FFA degree recipients.

FIGURE 2


FFA
AGRICULTURAL
FFA
EDUCATION
OFFICIAL SCRAP BOOK
NOAL PATTON

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OBJECTIVE 12 **Complete Assignment Sheet 1.**

OBJECTIVE 13 **Complete Assignment Sheet 2.**

OBJECTIVE 14 **Complete Assignment Sheet 3.**

ASSIGNMENT SHEET 1

ORIENTATION TO AGRICULTURAL EDUCATION

A1

Name ______________________________ Score __________

OBJECTIVE 12

Select an FFA judging contest in which to participate.

INTRODUCTION

Being on an FFA judging team is a very interesting and exciting experience. The contests allow you to apply the skills you have learned in your agricultural education classroom and shop. Contests are held at the local, county, state, and national levels. The time to start preparing for the team is now.

EQUIPMENT AND SUPPLIES

- OSU's *FFA Interscholastic Meet Rules and Regulations*

INSTRUCTIONS

Study the rules and regulations for each contest and then select a contest in which you wish to work. Identify the contest and answer the following questions.

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Cognitive Activities
- Collect/record information

1. Contest name ______________________________

2. How many members are on a team? ____________________

3. What resource material do you have to study? ____________

   ____

4. What type of awards are given to the first-place team? ______

   ____

5. Does the high-place individual receive an award or recognition?

   ____

6. Does the contest have a written assignment? ____________

   ____

7. Why did you select this contest? ____________________

____

____

____

____

____

____

____

____

ASSIGNMENT SHEET 2

ORIENTATION TO AGRICULTURAL EDUCATION

A1

Name ______________________________ Score __________

OBJECTIVE 13

Evaluate requirements for the FFA Greenhand degree.

INTRODUCTION

The FFA Greenhand degree is the highest degree a first-year agricultural education student can earn in the FFA chapter. The best way to prepare for this outstanding achievement is to be a very active FFA member. Participate in such activities as public speaking, chapter meetings, and FFA judging contests. Serve on standing committees. Participate at fairs and shows. Attend all FFA meetings. You also need a Supervised Agricultural Experience Program that is sufficient in size and scope to be worthy of this award. Start making plans now for applying for the award late in the school year.

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Cognitive Activities
- Collect/record information

In preparation for this award, answer the questions that follow.

1. Ask your instructor what the qualifications are. List them on the lines provided.

____

____

____

2. Ask your instructor if there is a form or an application for the award. If there is an application or form, obtain it and study its requirements. If there is no form, ask your instructor for the information that will be necessary to apply for the award. Outline the requirements on the lines provided.

____

____

____

____

____

3. Ask your instructor for the names of FFA members who have received the award in the last three years.

4. Interview the former recipients of the award. Ask them how they won the award.

ASSIGNMENT SHEET 3

ORIENTATION TO AGRICULTURAL EDUCATION

A1

Name ______________________________ Score __________

OBJECTIVE 14

Select an FFA project for the Supervised Agricultural Experience Program.

INTRODUCTION

You learn best by doing. Your Supervised Agricultural Experience Program allows you to apply and practice what you have learned in your agricultural education studies. Your advancement in the FFA, your agricultural education, and FFA career depend on your Supervised Agricultural Experience Program.

In selecting a program, you should consider personal preferences (your likes and dislikes), where you live (rural area or city), your spending power (money), and your resources (land, equipment, facilities). Your instructor will help you choose a project that is best suited to your needs. The instructor will also talk with your parents. First, you must decide what you want and like.

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Cognitive Activities
- Collect/record information

To assist you in making your selection, answer the questions that follow.

1. Do you like to work with livestock? ____________________

2. What type of livestock do you like? Circle your response.

   ☐ Beef cattle
   ☐ Dairy
   ☐ Sheep
   ☐ Swine
   ☐ Horses
   ☐ Poultry
   ☐ Rabbits

3. Do you have a place to keep livestock?____________________

   If yes, describe the place. ____________________

   ____

   ____

   ____

4. Do you like working with crops and plants? ______________

5. What type of crops and plants do you like? Circle your response.

☐ Wheat
☐ Corn
☐ Oats
☐ Rye
☐ Sorghum
☐ Peanuts
☐ Soybeans
☐ Vegetable production
☐ Fruit production
☐ Ornamental production

6. Do you have a place to grow crops and plants? ____________

If yes, describe the place. ______________________________

____

____

____

____

____

____

7. Do you own or have access to farming equipment? ________

If yes, describe the equipment. __________________________

____

____

____

____

____

8. What type of projects do you think you will choose for your Supervised Agricultural Experience Program? List them.

____

____

____

____

____

____

____

☑ **NOTE:** A Supervised Agricultural Experience Program in production agriculture or agribusiness is a three-way agreement between you, your parents, and your agricultural education instructor. This agreement is in your *FFA Supervised Agricultural Experience Program Record Book* and should be filled out and agreed upon prior to beginning a project. Take the agreement home and discuss it with your parents. Obtain your parents' permission for and agreement with your project. Have your agricultural education instructor approve the points of the agreement, and then copy the information into your record book and have all parties sign the agreement.

OBJECTIVE SHEET

AGRICULTURAL SAFETY

A2

INTRODUCTION

The National Safety Council considers agricultural occupations as highly hazardous. Fatalities and serious injuries result from agriculture related accidents. Many of these accidents can be prevented when you understand how an accident can happen and how to prevent it from happening. This unit will increase your awareness of potential safety hazards and will provide basic information for preventing accidents when working with farm machinery, equipment, and animals.

FOCUS ASSIGNMENTS

Reading Comprehension

- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language

- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition

- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	*Tractor Upsets - Cause and Prevention* by Joseph F. Gerling, OSU Fact Sheet No. 9420.
WRITING:	Write a two-page essay summarizing the causes of tractor upsets and the ways to prevent the upsets. If you have personal experience with a tractor upset, tell about the incident. Then, tell how the incident could have been prevented.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheet and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. List major agricultural safety areas.
2. Identify standard hand signals used when operating farm equipment on public roads.
3. Label hand signals used in machinery operation communications.
4. State safety precautions to observe when operating general farm machinery and equipment.
5. Select from a list regulations concerning use of the slow-moving vehicle (SMV) emblem.
6. Distinguish between safe practices for operating a tractor to prevent side overturns and safe practices for operating a tractor to prevent rear overturns.
7. State safety precautions to observe when refueling equipment.
8. State safety precautions to observe when handling farm animals.
9. Make recommendations to correct safety hazards. (Assignment Sheet)

AGRICULTURAL SAFETY

OBJECTIVE 1

Required Activities/Resources
- Discussion

Optional Activities/Resources in Instructor's Guide

List major agricultural safety areas.

ⓘ You will discuss the potential hazards of agricultural work.

- machinery safety
- home safety
- building and yard safety
- fire safety
- livestock safety
- electrical safety

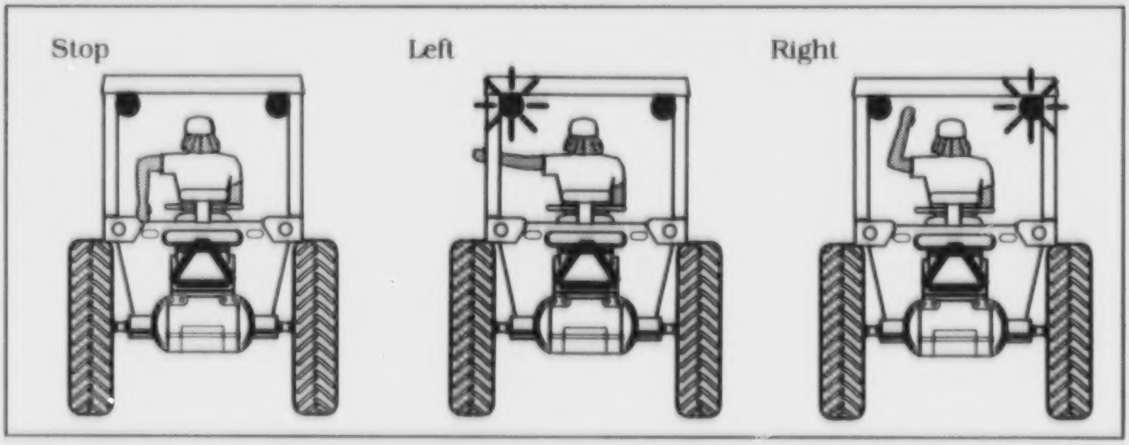
OBJECTIVE 2

Optional Activities/Resources in Instructor's Guide

Identify standard hand signals used when operating farm equipment on public roads.

☞ **NOTE:** Oklahoma regulations state that no person may turn any vehicle on public roads without first giving an appropriate signal. No person may stop or suddenly decrease speed without first giving an appropriate signal to any driver to the rear. All hand signals required must be given with the left hand and arm.

FIGURE 1



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OBJECTIVE 3

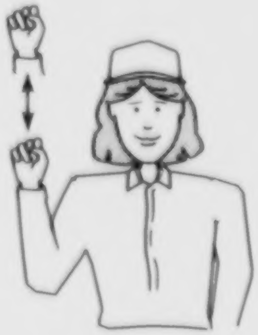
Optional Activities/
Resources in
Instructor's Guide

Label hand signals used in machinery operation communications.

☑ **NOTE:** Because of noise or distance, hand signal communication between a machinery operator and someone on the ground is sometimes necessary and helpful.

- Speed it up

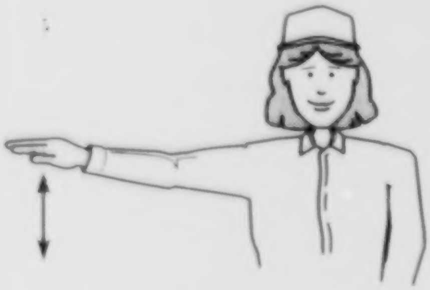
FIGURE 2



Clenching your fist, bend your arm so that your hand is at shoulder level. Thrust arm rapidly straight up and down several times.

- Slow it down

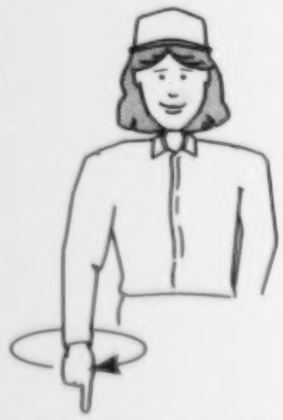
FIGURE 3



Extend arm straight out to the side, palm down. Keeping arm straight, move it up and down several times.

- Lower equipment

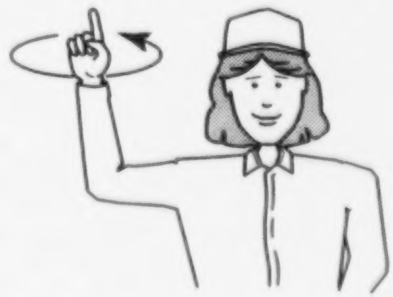
FIGURE 4



Point toward the ground with the forefinger of one hand, while moving the hand in a circle.

- Raise equipment

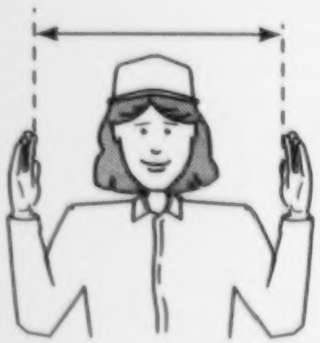
FIGURE 5



Point upward with forefinger, while making a circle at head level with your hand.

- This far to go

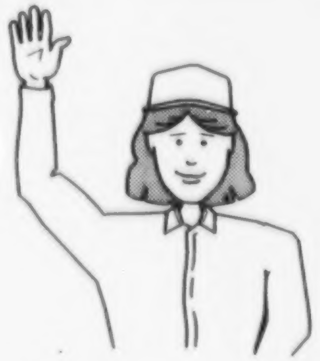
FIGURE 6



Put hands in front of face, palms facing each other. Move hands together or farther apart to indicate how far to go.

- Stop

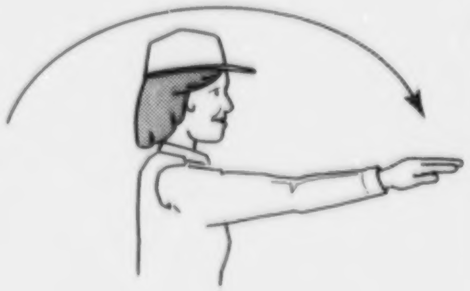
FIGURE 7



Raise arm straight up, palm to the front.

- Move out - take off

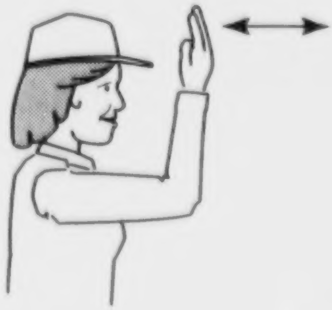
FIGURE 8



Face desired direction of movement. Extend arm straight out behind you. Then swing it overhead and forward until it is straight out in front of you with the palm down.

- Move toward me - follow me

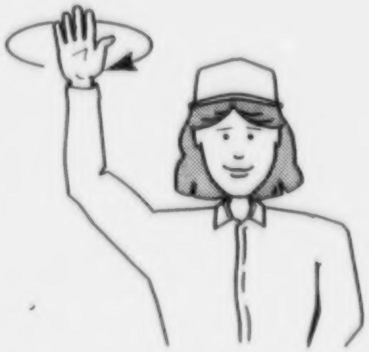
FIGURE 9



Look toward person or vehicle you want moved. Hold one hand in front of you, palm facing you, and move your forearm back and forth.

- Come to me

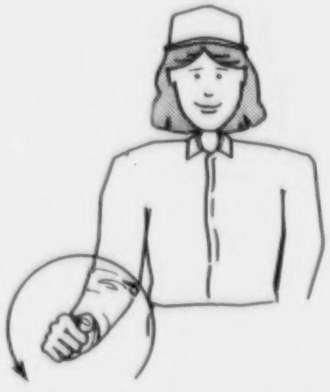
FIGURE 10



(May mean "come help me" in an emergency.) Raise arm straight up, palm to the front, move arm around in a large circle.

- Start the engine

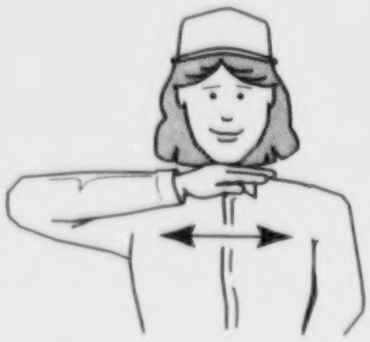
FIGURE 11



Move arm in a circle at waist level, as though you were cranking an engine.

- Stop the engine

FIGURE 12



Move your right arm across your neck from left to right in a "throat-cutting" motion.

OBJECTIVE 4

Optional Activities/ Resources in Instructor's Guide

State safety precautions to observe when operating general farm machinery and equipment.

WORDS YOU SHOULD KNOW

accident	unexpected or undesired event that interrupts work routines and often results in injury or loss
safety hazard	condition that often causes accidents
unsafe action	work process or factor of human activity in the work situation that has the potential to cause an accident
unsafe condition	work condition or factor in the work environment or situation that has the potential to cause an accident

- Keep all guards in place.
- Dress properly.

☑ **NOTE:** Loose fitting clothing is a hazard. Even something as seemingly insignificant as a thread or a shoestring can be dangerous.

- Take breaks.

  ☞ **NOTE:** Working long, hard hours makes a person mentally and physically tired. When tired, people become careless and reaction time to hazards is slower.

- Avoid situations that can pinch, wrap, shear, crush, or pull in.

  CAUTION: Practically all moving parts of any type of machinery have the capabilities of any or all of the actions stated above.

- Be aware of overhead electrical lines when handling long, vertical objects or operating tall equipment, or equipment with antennas.

  ☞ **NOTE:** Individuals have been killed as a result of equipment or antennas coming in contact with electrical lines. Electrocution occurs when the person holding the equipment in contact with electrical lines touches the ground.

- Always turn off machines before working on them or making adjustments.
- Before leaving self-propelled equipment, set the brakes or place in park.
- Never operate a machine on which you have not received extensive training.

OBJECTIVE 5

Required Activities/ Resources
- Transparency Master

Optional Activities/ Resources in Instructor's Guide

Select from a list regulations concerning use of the slow-moving vehicle (SMV) emblem.

You will see a transparency showing the SMV emblem.

- Required on all vehicles that move 25 miles per hour or less on public roads

  ☞ **NOTE:** Any time equipment is moving above 25 miles per hour, the SMV emblem must be covered or removed.

- Must be mounted point up in plain sight of traffic approaching from rear (Figures 13 and 14)

- Must be mounted so that the bottom edge is 2 to 6 feet above the ground (Figure 15)
- Must be displayed in addition to any lighting devices or other equipment required by law
- Must be displayed day and night

FIGURE 13

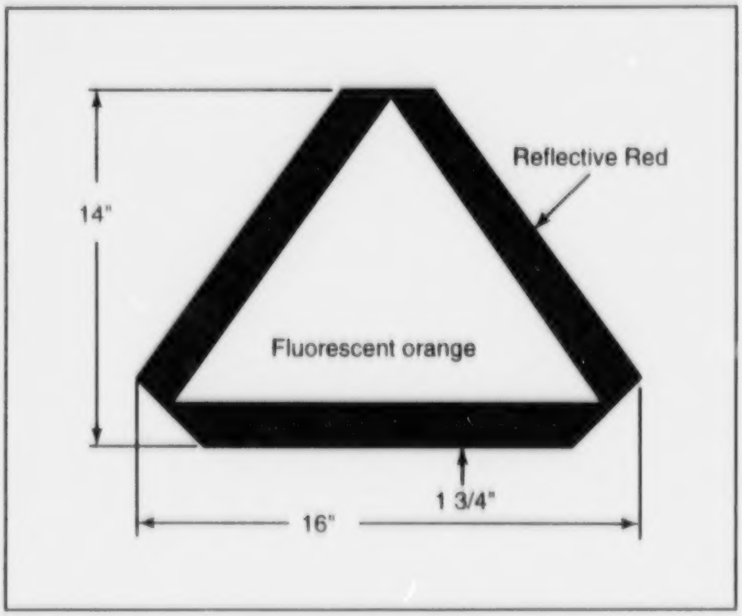

Reflective Red
14"
Fluorescent orange
1 3/4"
16"

FIGURE 14

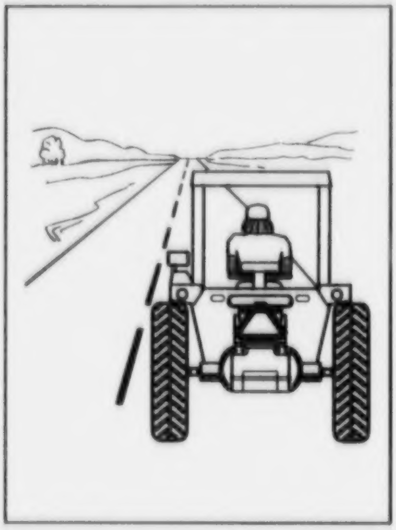
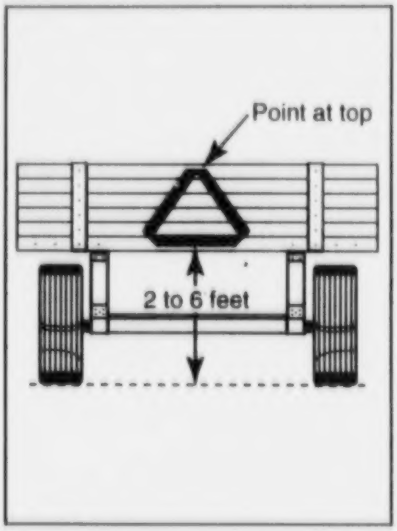


FIGURE 15


Point at top
2 to 6 feet

Figures 14 and 15 used with permission of Deere and Company, Moline, Illinois

OBJECTIVE 6

Distinguish between safe practices for operating a tractor to prevent side overturns and safe practices for operating a tractor to prevent rear overturns.

Optional Activities/
Resources in
Instructor's Guide

☞ **NOTE:** Rear overturns and side overturns are the major types of tractor upsets. Studies show that 75 percent of the fatalities that result from tractor upsets are side overturns.

- Side overturns
  - ☐ Widen the wheel base to the widest setting possible for the job to be done.

    ☞ **NOTE:** A wide wheel base provides the widest possible base of stability for the tractor.

  - ☐ Lock brake pedals together before driving at transport speeds.

    ☞ **NOTE:** Applying the brakes to one wheel will cause the tractor to swerve abruptly, and at high speeds will cause side overturns.

  - ☐ Restrict speed according to operating conditions.

    ☞ **NOTE:** Travel slowly enough to see and to react to hazards such as bumps, rocks, stumps, holes, ruts, and depressions.

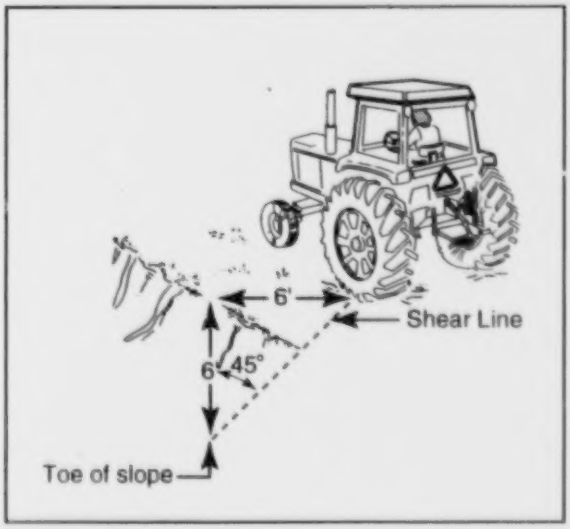
  - ☐ Pull heavy loads and equipment at safe speeds.

    ☞ **NOTE:** If equipment weaves back and forth at high speeds, the tractor will weave also, and the operator may lose control.

- Stay away from ditches and riverbanks. (Figure 16)

NOTE: A good rule of thumb is to stay as far away from the bank as the ditch is deep. The weight of the tractor can cave in the bank if the shear line is crossed or approached. (Figure 16)

FIGURE 16


6'
Shear Line
6'
45°
Toe of slope

Used with permission of Deere and Company, Moline, Illinois.

- Operate front-end loaders with the bucket as low as is practical. (Figures 17 and 18)

FIGURE 17

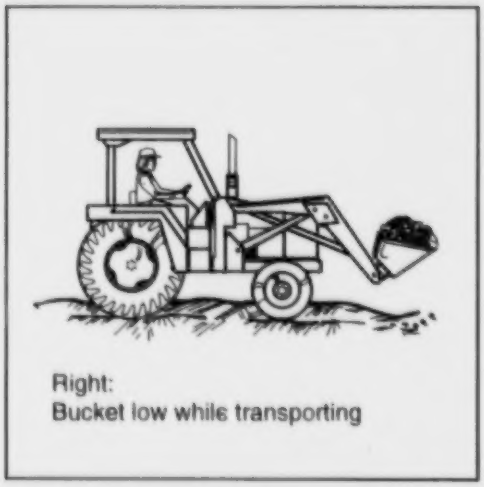
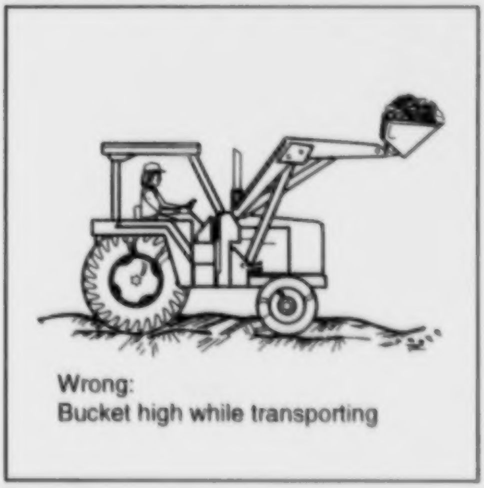

Right:
Bucket low while transporting

FIGURE 18


Wrong:
Bucket high while transporting

Figures 17 and 18 used with permission of Deere and Company, Moline, Illinois.

☐ Make turns slowly, especially on rough terrain.

- Rear overturns

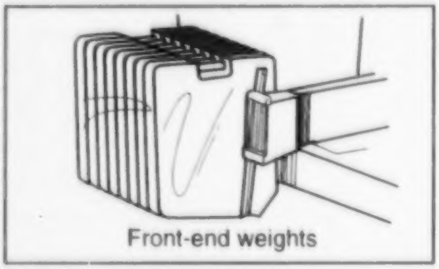
☐ Hitch towed loads only to drawbar.

☑ **NOTE:** If the hitch point is raised above the recommended height, or if the load is attached to any other point but the drawbar, the chances of a backward upset are greatly increased.

☐ Add front-end weights to counterbalance heavy rear-mounted implements and heavy drawbar loads. (Figure 19)

☑ **NOTE:** Check owner's manual for specifications on front-end weights.

FIGURE 19



Used with permission of Deere and Company, Moline, Illinois.

☐ Start forward motion slowly.

☑ **NOTE:** Gunning the engine and jerking the foot off the clutch to start a heavy load is one of the surest ways to tip a tractor over backward.

☐ Brake cautiously if you must back down a grade.

☑ **NOTE:** If a steep grade must be climbed, back the tractor up the grade and come down by driving forward, if possible.

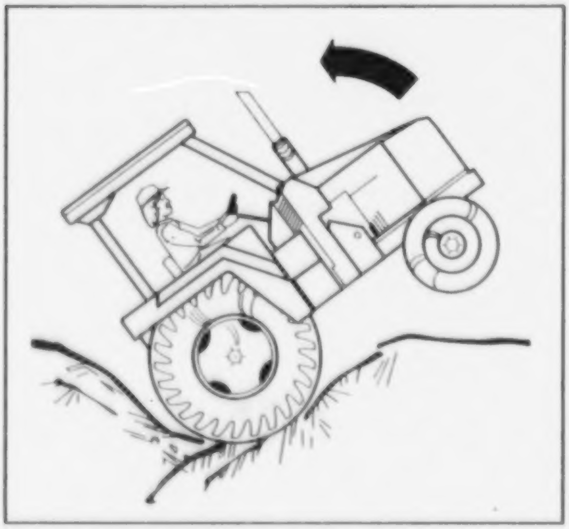
☐ Plan for safe forward uphill pulls.

☐ Back the tractor out of mud or pull out with another tractor.

☐ Back out if the drive wheels become lodged in a ditch. (Figure 20)

☑ **NOTE:** The tractor may tip backward when being driven forward out of a ditch.

FIGURE 20



Used with permission of the American Association for Vocational Instructional Materials

OBJECTIVE 7

Optional Activities/ Resources in Instructor's Guide

State safety precautions to observe when refueling equipment.

- Turn off the engine on gasoline or liquid propane (LP) engines.
- Allow the engine to cool off.
- Do not fill the tank completely full.
- Replace the fuel cap tightly.
- Do not smoke when refueling the equipment.
- Perform daily checks of tank and fuel lines for leaks.
- Make sure that a fire extinguisher is readily available.

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

State safety precautions to observe when handling farm animals.

- Have adequate restraining and handling facilities.
- Keep livestock equipment in good repair.
- Be calm and deliberate when working around livestock.
- Watch for sudden movements of animals.

  EXAMPLES: Butting, kicking, sudden charging
- Refrain from scaring, teasing, or mistreating animals.

  ☑ **NOTE:** Caution young workers or children about reaching into pens or through fences to pet or feed animals.
- Stay away from animals that seem angry or frightened.
- Beware of mature male breeding animals and females with young.

  EXAMPLES: Bulls, boars, rams, sows with pigs, cows with calves, ewes with lambs
- Keep nonworking bystanders and children safely back from livestock working areas.
- Wear safety shoes or boots, head protection, and hand protection.
- Never tie a lead strap or line to your body.
- Keep animal facilities clean and free of hazards that could cause tripping.
- Put utensils, tools, and equipment away after use.
- Watch your step on slippery surfaces.

OBJECTIVE 9

Complete the Assignment Sheet.

ASSIGNMENT SHEET

AGRICULTURAL SAFETY

A2

Name ______________________________ Score __________

OBJECTIVE 9

Make recommendations to correct safety hazards.

INSTRUCTIONS

The farm home and farmstead can be a safe and enjoyable place to work if the owner checks for safety hazards that may exist. Use the following survey to check for safety hazards. Complete the survey at your home or at a location designated by your instructor.

Reading Comprehension
- Analyze cause and effect

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Functional Writing
- Complete forms and records

Cognitive Activities
- Collect/record information
- Define a problem
- Identify underlying causes
- Evaluate alternatives
- Select an alternative
- Devise a solution

HOME SAFETY

Possible Hazards	Yes	No	What can be done to improve the situation?
Are the porch steps in good repair?			
Are ladders in good repair?			
Are all stairways in good repair?			
Are there handrails for stairways?			
Are your rugs skid-proof?			
Are floors clear of toys and other tripping hazards?			
Are handles of cooking utensils turned toward the back of the stove?			
Are paint or oily rags stored in airtight metal containers?			
Are basements, closets, and attics kept clear of rubbish and flammable materials?			
Are petroleum fuels stored away from buildings?			
Are sharp knives kept in a rack?			
Are poisons and medicines clearly labeled and stored out of reach of children?			
Are water and grease spills wiped up immediately?			
Is a family member qualified to give first aid?			
Is there an equipped first-aid kit in the home?			
Are ladders properly and safely stored?			
Are guns unloaded and the ammunition and guns stored safely away from children?			

Possible Hazards	Yes	No	What can be done to improve the situation?
Are doors removed from old refrigerators that could be a hazard for children?			
Are hammer and ax heads secure and handles in good condition?			
Are full-length glass doors properly marked?			
Are tubs and showers safeguarded against slips and falls?			
Are emergency numbers posted near phones?			

Source: Oklahoma 4-H Safety Program

BUILDING AND YARD SAFETY

Possible Hazards	Yes	No	What can be done to improve the situation?
To prevent carbon monoxide poisoning, are garage doors opened before the engines are started?			
Is the yard kept free of rusty wire, nails, tin cans, and broken glass?			
Are doors and gates kept in repair in the barn and yard?			
Are areas around farm buildings free of deep holes?			
Are pitchfork tines and rake teeth pointed into the ground when left temporarily?			
Is there a definite place for each tool when not in use?			
Are dangerous tools kept away from play areas?			
Are metal roofs equipped with at least four lightning arresters or ground wires, one at each corner?			
Are lawnmower guards and shields left in place?			

Source: Oklahoma 4-H Safety Program

MACHINERY SAFETY

Possible Hazards	**Yes**	**No**	**What can be done to improve the situation?**
Are machines stopped while being oiled, cleaned, or adjusted?			
Are guards and shields kept in place on all machines at all times?			
Do operators make certain that no one is in front or behind before starting the engine or backing any machine or vehicle?			
Are passengers kept from riding on farm machinery?			
Is the engine stopped and allowed to cool before the fuel tank is refilled?			
Do workers avoid wearing loose-fitting or torn clothing and gloves around machinery?			
Do workers avoid climbing over or around a running combine?			
Is the gear shift lever in neutral before starting the engine?			
Are the tractor and power take-off stopped before getting off the tractor?			
Are tractors and implements equipped with SMV emblems?			
Are steep hills and irregular slopes that might cause the tractor to overturn avoided?			
Is operating a tractor in a closed building avoided?			
Is there a fire extinguisher on every self-propelled piece of equipment?			

Source: Oklahoma 4-H Safety Program

Possible Hazards	**Yes**	**No**	**What can be done to improve the situation?**
Is current shut off before a new fuse or breaker is installed?			
Are electric irons, toasters, and other electrical equipment disconnected when not in use?			
Are faulty appliances repaired at once?			
Do you avoid touching light fixtures or cords while standing in wet places?			
Are all electric motors grounded?			
Are proper cords used for outside work?			
Are frayed and worn cords repaired or replaced when needed?			
Are fallen electric wires reported to the proper authority?			

Source: Oklahoma 4-H Safety Program

FIRE SAFETY

Possible Hazards	**Yes**	**No**	**What can be done to improve the situation?**
Are matches kept in metal containers and out of reach of children?			
Do you avoid using kerosene or gasoline to start fires?			
Is gasoline stored at a safe distance from buildings?			
Is smoking in bed, near gasoline, and in the barn forbidden?			
Are grass and weeds cut short around the home, barn, or other buildings?			
Is a first-aid kit available for treatment of burns or other injuries?			
Is an approved fire extinguisher placed conveniently near any location of special fire hazard?			
Do the family and employees know how to use fire extinguishers?			
Is there enough garden hose and adequate supply of buckets for carrying water during a fire?			
Are there ladders long enough to reach the roof for rescuing members of the family from the home in case of fire?			
Is soot cleaned out of chimneys and pipes frequently?			
Is there a definite plan of action for a fire emergency?			
Is the number of the nearest fire department posted prominently near the phone?			
Are there fire guards around pastures and hay meadows?			
Is there a smoke detector in the home?			

Source: Oklahoma 4-H Safety Program

OBJECTIVE SHEET

INTRODUCTION TO FFA

B1

INTRODUCTION

FFA is a national organization for students who are enrolled in agricultural education. You can join a local FFA chapter within your school. FFA offers you the opportunity to develop leadership skills and job skills to be used in the world of work.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Go to your classroom library or your school library and find a magazine that deals with agriculture or young farmers' organizations. Find an article that deals with FFA or any agricultural organization.
WRITING:	Write a short essay on how the information in the news article might affect agriculture in your community.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Select from a list requirements for FFA membership.
2. Select from a list the types of FFA membership.
3. State the code of ethics for FFA members.
4. List the colors of FFA and the parts of the FFA emblem.
5. State the meaning of each part of the FFA emblem.
6. State proper uses of the FFA jacket.
7. List the essentials of an effective FFA chapter.
8. List the characteristics of a successful FFA meeting.
9. List the purposes of the State FFA Association.
10. List names of state FFA officers and selected members of the state agricultural education staff.
11. List the official FFA publications.
12. List examples of activities that a local chapter can participate in or sponsor during National FFA Week.
13. Recite the FFA motto. (Assignment Sheet 1)
14. Recite the FFA creed. (Assignment Sheet 2)
15. Use the *Official FFA Manual.* (Assignment Sheet 3)
16. Prepare for the FFA Greenhand Quiz contest. (Assignment Sheet 4)

INFORMATION SHEET

INTRODUCTION TO FFA

B1

OBJECTIVE 1

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Select from a list requirements for FFA membership.

Estimate the number of national FFA members.

WORDS YOU SHOULD KNOW	
FFA member	individual meeting the requirements for membership in the FFA and winning majority approval of the membership
Supervised Agricultural Experience (SAE) Program	agricultural experiences that members put into practice under the supervision of an advisor ☑ **NOTE:** SAE Programs may include skills and activities learned in the classroom, laboratory, and shop.

- Must be enrolled in an agricultural education class
- Must remain in good standing with local chapter
- Must attend all FFA meetings
- Must have a Supervised Agricultural Experience Program

☑ **NOTE:** Some local chapters may have additional requirements. Please ask your instructor if your chapter has additional requirements.

OBJECTIVE 2

Optional Activities/
Resources in
Instructor's Guide

Select from a list the types of FFA membership.

- Active
- Honorary
- Alumni
- Collegiate

OBJECTIVE 3

Required Activities/
Resources
- Discussion

Optional Activities/
Resources in
Instructor's Guide

State the code of ethics for FFA members.

Discuss the question "Why is it necessary to be productive, useful citizens?"

- Dress neatly and appropriately for the occasion.
- Show respect for the rights of others and be courteous at all times.
- Be honest and do not take unfair advantage of others.
- Respect property of others.
- Refrain from loud, boisterous talk, swearing, and other unbecoming conduct.
- Demonstrate sportsmanship in the show ring, judging contests, and meetings; be modest in winning and generous in defeat.
- Attend meetings promptly and respect the opinions of others in discussion.
- Take pride in the FFA organization, activities, Supervised Experience Programs, exhibits, and in the occupation of agriculture.
- Share with others experiences and knowledge gained by attending national and state meetings.

OBJECTIVE 4

Required Activities/
Resources
- Transparency Master

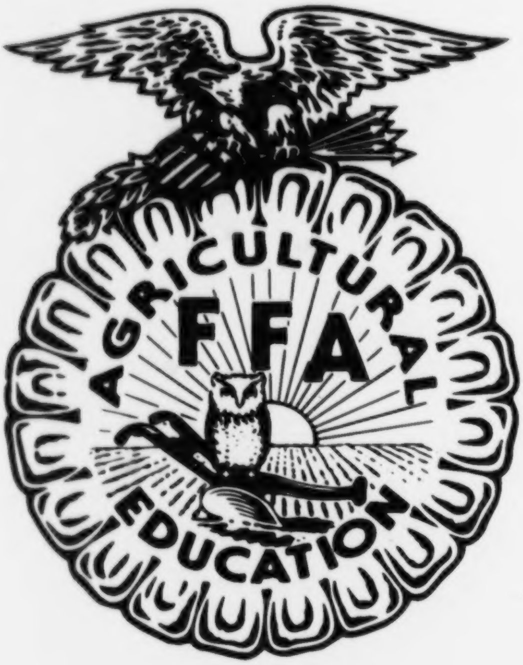
Optional Activities/
Resources in
Instructor's Guide

List the colors of FFA and the parts of the FFA emblem.

You will see a transparency showing the parts of the FFA emblem.

- FFA Colors
  - National blue
  - Corn gold

- FFA emblem
    - Cross section of the ear of corn
    - Rising sun
    - Plow
    - Eagle
    - Owl



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OBJECTIVE 5

Required Activities/ Resources
– Discussion

Optional Activities/ Resources in Instructor's Guide

State the meaning of each part of the FFA emblem.

Discuss the question "Why should we show pride in being FFA members?"

- **The cross section of the ear of corn** provides the foundation of the emblem, just as corn has historically served as the foundation crop of American agriculture. It is also a symbol of unity, as corn is grown in every state of the nation.

- **The rising sun** signifies progress and holds a promise that tomorrow will bring a new day glowing with opportunity.

- **The plow** signifies labor and tillage of the soil, the backbone of agriculture and the historic foundation of our country's strength.

- **The eagle** is a national symbol which serves as a reminder of our freedom and ability to explore new horizons for the future of agriculture.

- **The owl**, long recognized for its wisdom, symbolizes the knowledge required to be successful in the industry of agriculture.

OBJECTIVE 6

Optional Activities/ Resources in Instructor's Guide

State proper uses of the FFA jacket.

WORDS YOU SHOULD KNOW	
Executive Committee	elected officers and advisor responsible for guiding the FFA organization
FFA chapter	official local body of the FFA organization; place where members assemble to conduct and manage the chapter business
order of business	activities that are to be followed at all FFA meetings
paraphernalia	equipment and materials necessary for conducting an official FFA meeting

- The jacket should only be worn by members.

- It should be kept clean and neat.

- The jacket should have only a large emblem on the back and a small emblem on the front; the name of the State Association and the name of the local chapter on the back; and the name of the individual and one office or honor on the front.

- The jacket should be worn on official occasions with the zipper fastened to the top. The collar should be turned down and the cuffs buttoned.

- The jacket should be worn by officers and members on all official FFA occasions, as well as other occasions where the chapter or State Association is represented. It may be worn to school and other appropriate places.

- The jacket should only be worn to places that are appropriate for members to visit.
- School letters and insignia of other organizations should not be attached to or worn on the jacket.
- When the jacket becomes faded and worn, it should be discarded or the emblems and lettering removed.
- The emblems and lettering should be removed if the jacket is given or sold to a nonmember.
- A member always acts like a lady or gentleman when wearing the jacket.
- Members should refrain from use of tobacco and alcohol while wearing the FFA jacket or officially representing the organization.
- All chapter degree, officer, and award medals should be worn beneath the name on the right side of the jacket, with the exception that a single State FFA charm and American FFA Degree key should be worn above the name or attached to a standard key chain. No more than three medals should be worn on the jacket; these should represent the highest degree earned, the highest office held, and the highest award earned by the member.

OBJECTIVE 7

Optional Activities/ Resources in Instructor's Guide

List the essentials of an effective FFA chapter.

- Knowledge of the FFA on the part of every member
- Capable officers and leaders
- Responsibilities shared by all members in chapter activities
- Challenging program of activities
- Adequate financing for chapter activities
- Proper equipment and records
- A workable Constitution and Bylaws
- Well-planned, regularly held chapter meetings
- Support by school officials and community leaders

- A chapter resource system in place

☑ **NOTE:** Some local chapters may have additional requirements. Please ask your instructor if your chapter has additional requirements.

OBJECTIVE 8

Optional Activities/ Resources in Instructor's Guide

List the characteristics of a successful FFA meeting.

- Meeting schedule placed on the school's activity calendar
- Uses an executive committee to assure careful planning in advance of the meeting time
- The agenda posted several days prior to the meeting
- Starts and finishes on time
- Proceeds according to an established order of business
- Conducted according to accepted parliamentary procedure
- Officer and committee reports are written and ready to present
- Conducted by officers familiar with their duties and responsibilities
- Commands the interest and attention of all members
- Provides for maximum member participation and for development of cooperative attitudes among members
- Includes business, entertainment features, and refreshments
- Contains a minimum of active participation by the advisor

OBJECTIVE 9

Optional Activities/ Resources in Instructor's Guide

List the purposes of the State FFA Association.

- Provide leadership to local chapters
- Conduct State FFA Convention
- Conduct leadership training sessions for local officers
- Conduct public speaking contests
- Represent the state at national FFA events

OBJECTIVE 10

Optional Activities/
Resources in
Instructor's Guide

List names of state FFA officers and selected members of the state agricultural education staff.

☑ **NOTE:** The names of FFA officers and agricultural education staff change yearly. Ask your instructor for the names of current state FFA officers and agricultural education staff.

Person	Title
•	
•	
•	
•	
•	
•	
•	
•	
•	
•	

OBJECTIVE 11

Optional Activities/
Resources in
Instructor's Guide

List the official FFA publications.

- National – *FFA New Horizons*
- State – ______________________________

OBJECTIVE 12

Optional Activities/
Resources in
Instructor's Guide

List examples of activities that a local chapter can participate in or sponsor during National FFA Week.

- radio and television programs
- FFA Week articles in newspapers
- school assemblies
- civic club programs

- parent and member banquet
- educational exhibit in the community
- church attendance as a group
- window displays
- Food for America program

☑ **NOTE:** List additional activities below.

____

____

OBJECTIVE 13	**Complete Assignment Sheet 1.**
OBJECTIVE 14	**Complete Assignment Sheet 2.**
OBJECTIVE 15	**Complete Assignment Sheet 3.**
OBJECTIVE 16	**Complete Assignment Sheet 4.**

ASSIGNMENT SHEET 1

INTRODUCTION TO FFA

B1

Name ______________________________ Score __________

OBJECTIVE 13

Recite the FFA motto.

INTRODUCTION

The FFA motto is what every FFA member believes and practices each day. As a first year agricultural education student and a greenhand in the National FFA Organization, it is necessary for you to memorize the FFA motto and to practice saying the motto with meaning and sincerity.

INSTRUCTIONS

Oral Presentation
- Use good speaking techniques

Listening
- Apply active listening skills

Interactive Communications
- Work effectively in a group

Teamwork/Cooperative
- Give/receive feedback

Leadership/Influencing
- Provide positive coaching

The motto is written below. Read the FFA motto aloud several times, and then practice saying the motto without looking at the words. Break into groups and practice reciting the FFA motto to one another. Practice until you feel comfortable reciting the motto without having to read it from the page. Use this exercise to help you with public speaking skills. Offer feedback and ideas for improvement to one another concerning speaking skills.

After you have practiced saying the FFA motto without looking at the words, practice saying it when looking into a mirror. This practice allows you to give meaning to the words. Be prepared to recite the FFA motto to the class when called upon by the instructor.

The FFA Motto

LEARNING TO DO
DOING TO LEARN
EARNING TO LIVE
LIVING TO SERVE

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ASSIGNMENT SHEET 2

INTRODUCTION TO FFA

B1

Name ______________________________ Score __________

OBJECTIVE 14

Recite the FFA creed.

INTRODUCTION

The FFA creed has been recited by every individual who has been a member of the National FFA Organization. The creed expresses the true meaning of agriculture and the role that the FFA member plays in making our country and community a better place to live and to work. The creed was written by E. M. Tiffany, and the membership attending the 3rd National FFA Convention adopted it in 1930.

INSTRUCTIONS

Oral Presentation
- Use good speaking techniques

Listening
- Apply active listening skills

Interactive Communications
- Work effectively in a group

Teamwork/Cooperative
- Give/receive feedback

Leadership/Influencing
- Provide positive coaching

It is best to learn the creed a paragraph at a time. Start with the first paragraph and learn it. Then move on to the second paragraph. Repeat these steps with each paragraph. Learn to say the creed speaking slowly, but also learn to stress the important parts of each paragraph. It is best to practice saying the creed to someone.

Break into groups and practice reciting the FFA creed to one another. Practice until you feel comfortable reciting the creed without having to read it from the page. Use this exercise to help you with public speaking skills. Offer feedback and ideas for improvement to one another concerning speaking skills.

☑ **NOTE:** In many instances, the FFA chapter holds an FFA Creed contest and selects the person who did the best job of reciting the creed to represent the chapter in other competition.

The FFA Creed

I believe in the future of agriculture, with a faith born not of words but of deeds—achievements won by the present and past generations of agriculturists; in the promise of better days through better ways, even as the better things we now enjoy have come to us from the struggles of former years.

I believe that to live and work on a good farm, or to be engaged in other agricultural pursuits, is pleasant as well as challenging; for I know the joys and discomforts of agricultural life and hold an inborn fondness for those associations which, even in hours of discouragement, I cannot deny.

I believe in leadership from ourselves and respect from others. I believe in my own ability to work efficiently and think clearly, with such knowledge and skill as I can secure, and in the ability of progressive agriculturists to serve our own and the public interest in producing and marketing the product of our toil.

I believe in less dependence on begging and more power in bargaining; in the life abundant and enough honest wealth to help make it so - for others as well as myself; in less need for charity and more of it when needed; in being happy myself and playing square with those whose happiness depends upon me.

I believe that American agriculture can and will hold true to the best traditions of our national life and that I can exert an influence in my home and community which will stand solid for my part in that inspiring task.

☑ **NOTE:** The creed was written by E.M. Tiffany, and adopted at the 3rd National Convention of the FFA. It was revised at the 38th Convention and the 63rd Convention.

Used with permission of National FFA Organization, National FFA Center, Alexandria, VA.

Name ______________________________ Score __________

OBJECTIVE 15

Use the *Official FFA Manual*.

INTRODUCTION

The *Official FFA Manual* is the official publication of the National FFA Organization. All FFA members and officers should be able to answer questions and make decisions about chapter activities. Your answers to questions and the decisions that you make should be based on facts found in the *Official FFA Manual*.

INSTRUCTIONS

Reading Comprehension
- Gain factual information
- Draw conclusions

Research and Reference
- Use in-book reference tools

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Cognitive Activities
- Collect/record information
- Draw conclusions

Use the most current *Official FFA Manual* to answer the following questions.

1. What is the name of the National Advisor?

____

2. Who is the National Treasurer?

____

3. What is the name of the person who is serving as National Executive Secretary of the National FFA Organization?

____

4. What city and state is the home of the National FFA Center?

____

5. The Future Farmers of America organization was organized in what month and year?

____

6. The FFA is structured on three levels. What are they?

____

7. How many National FFA officers are elected annually?

____

8. What are the titles of the elected officers of the National FFA?

9. The National FFA Organization is governed by what type of a body?

10. What is the name of the official FFA magazine?

11. What year was the FFA Supply Service created?

12. In what year did the FFA start publishing the official FFA magazine?

13. Where is the headquarters of the National FFA Organization?

14. How many FFA chapters are there?

15. What is the membership of the National FFA?

16. What is the address of the National FFA Supply Service?

17. How many times per year is the National FFA magazine published?

18. Name the four styles of the FFA calendars.

19. What is the function of the National FFA Foundation, Incorporated?

____

____

20. What year was the National FFA Foundation chartered?

____

21. How many members serve on the board of trustees of the FFA Foundation, Incorporated?

____

22. In what year was the FFA Alumni Association organized?

____

23. What is the purpose of FFA camps and leadership conferences?

____

____

24. What types of chapter awards and activities are available?

____

____

25. When are FFA Foundation scholarship applications due at the National FFA Center?

____

26. What are the names of the skill competitions and activities of FFA?

____

____

____

____

27. What is the official FFA dress for male members?

____

____

28. What is the official FFA dress for female members?

____

____

29. What are the names of the two FFA public speaking contests?

____

____

30. What is the purpose of the Star Awards?

____

31. What are the names of the different types of FFA Star Awards?

____

____

____

32. How many FFA chapters are there in the United States and your state?

Chapters in United States ______________________________

Chapters in your state ______________________________

33. What are the names of the different FFA proficiency award areas?

____

____

____

____

____

____

____

34. What is the FFA motto?

35. Who was the individual who wrote the FFA creed?

36. At what National FFA Convention was the FFA creed adopted?

37. At what conventions was the FFA creed revised?

38. What is the first paragraph of the FFA creed?

39. How many symbols make up the National FFA emblem?

Name the symbols and give a definition for each.

40. What are the FFA colors? ______________________

____

41. What are the words of the Pledge of Allegiance?

____

____

____

____

____

42. What are the names of the four degrees of active membership in the FFA?

____

____

____

____

43. What degree does the National FFA Organization confer on active members?

____

44. What are the names of the offices of the chapter?

____

____

____

____

45. What is the FFA Mission?

____

____

____

____

46. Who was the first National FFA President?

47. What is the purpose of the chapter program of activities?

48. The FFA program of activities should include several areas of activity. What are the names of these areas?

49. What is the correct room arrangement for an FFA meeting? (Draw and label the correct arrangement.)

50. What does the FFA gavel symbolize?

51. What do two taps of the gavel mean?

52. What do three taps of the gavel mean?

53. Why does the FFA chapter have honorary memberships?

54. What are the symbols of the FFA officers' stations?

ASSIGNMENT SHEET 4

INTRODUCTION TO FFA

B1

Name ______________________ Score ________

OBJECTIVE 16

Prepare for the FFA Greenhand Quiz contest.

INTRODUCTION

If you work hard and prepare for the Greenhand Quiz you can earn the opportunity to represent your chapter at the Professional Improvement Meeting and State FFA Greenhand contest.

INSTRUCTIONS

Reading Comprehension
- Gain factual information
- Draw conclusions

Research and Reference
- Use in-book reference tools

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Cognitive Activities
- Collect/record information
- Draw conclusions

In a previous Assignment Sheet, you used the *Official FFA Manual* to look up answers to selected questions about the FFA. Study your answers for a few minutes; then, without using the answers or the FFA manual, answer the following questions. Write your answers in the blanks, or circle the appropriate answer.

1. Who is the National FFA Advisor?

____

2. Who is the National FFA Treasurer?

____

3. Who is the Executive Secretary of the National FFA Organization?

____

4. Where is the National FFA Center located?

   A. Washington, DC

   B. Virginia

   C. Maryland

   D. Kansas

5. In what year was the Future Farmers of America organization organized?

A. 1931

B. 1928

C. 1930

D. 1927

6. How many elected national FFA offices are there? ____________

7. What are the titles of the elected officers of the National FFA Organization.

____

____

____

8. What is the name of the official FFA magazine? ____________

9. How many times per year is the national FFA magazine published?

____

10. In what year was the National FFA Foundation, chartered?

A. 1958

B. 1934

C. 1944

D. 1928

11. How many FFA chapters are in the United States? ____________

in your state? ______________________________________

12. What is the approximate membership of the National FFA?

________________; of your state FFA? ________________

13. In what year was the FFA Alumni Association organized?

A. 1971

B. 1968

C. 1955

D. 1981

14. Who was the first National FFA President?

____

15. What are the names of the two types of speaking contests?

____

____

16. What is the official FFA dress for male members?

____

____

17. What is the official FFA dress for female members?

____

____

____

18. The president of the FFA chapter uses the gavel while conducting meetings. What is the function of the gavel?

____

19. When the president taps the gavel two times, what should members do?

____

20. When the president taps the gavel three times, what should members do?

____

21. Why do FFA chapters have honorary memberships?

____

22. What are the symbols on the FFA emblem?

- ____________________________________
- ____________________________________
- ____________________________________
- ____________________________________
- ____________________________________

23. What are the FFA colors? ________________________

24. What are the names of the four degrees of active membership in the FFA?

- ____________________________________
- ____________________________________
- ____________________________________
- ____________________________________

25. What is the highest degree that a state association can give?

____

26. What is the highest degree that the National FFA Organization can confer on an active member?

____

27. What are the elected offices of the local FFA chapter?

- ____________________________________
- ____________________________________
- ____________________________________
- ____________________________________

- ____
- ____

28. Who wrote the FFA creed? ______________________________

29. In what year was the FFA creed adopted?

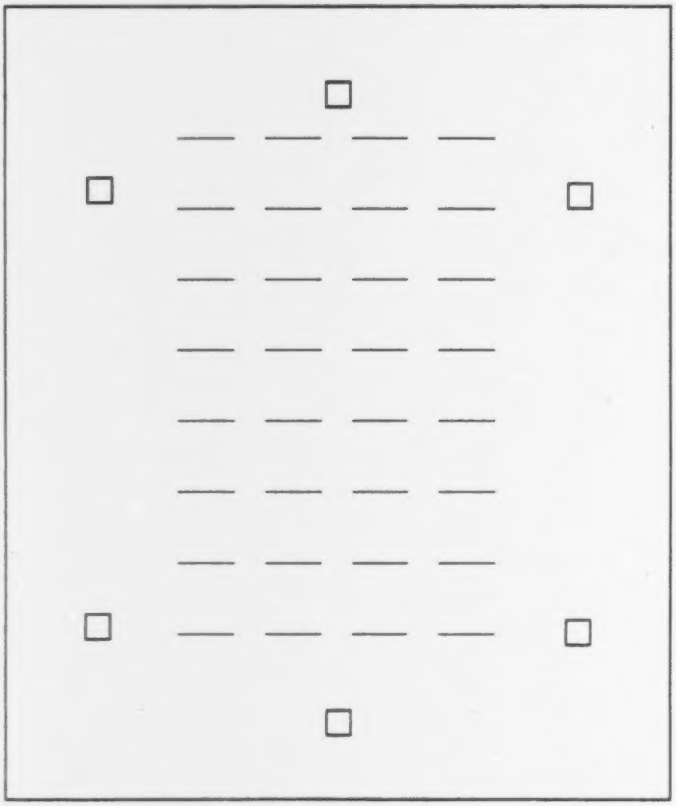
    A. 1928

    B. 1930

    C. 1945

    D. 1950

30. Label the room arrangement illustrated below. Write the correct offices in the blanks.



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31. What is the FFA motto?

OBJECTIVE SHEET

PARLIAMENTARY PROCEDURE

B2

INTRODUCTION

Parliamentary procedure was developed to help keep meetings on track and organized. This unit will help you gain a working knowledge of parliamentary procedure, types of motions, and how parliamentary procedure can benefit your FFA chapter.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Read *Parliamentary Procedure* by R. E. Page and Cecil D. Maynard, OSU Fact Sheet No. 806.
WRITING:	Write a one to two page essay explaining the need for parliamentary procedure. You should include the common errors in parliamentary procedure.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Select from a list the purposes of parliamentary procedure.
2. State the function of the gavel.
3. Identify methods of voting.
4. Discuss types of motions.
5. Match types of motions to their correct classifications.
6. Match parliamentary procedures to their correct uses during a meeting.
7. Arrange in order the steps in the progression of a motion (Rule of Eight).
8. State the purpose of a motion to amend.
9. List ways to amend a motion.
10. Select from a list the duties of a chapter president.
11. List the desired characteristics of a chapter parliamentary procedure team member.
12. Discuss parliamentary procedure motions. (Assignment Sheet 1)
13. Answer questions about parliamentary procedure. (Assignment Sheet 2)
14. Process a motion using the Rule of Eight. (Assignment Sheet 3)
15. Use parliamentary procedure to conduct or participate in a mock chapter meeting. (Assignment Sheet 4)

INFORMATION SHEET

PARLIAMENTARY PROCEDURE

B2

OBJECTIVE 1

Optional Activities/
Resources in
Instructor's Guide

Select from a list the purposes of parliamentary procedure.

WORDS YOU SHOULD KNOW	
bylaws	the document that contains an organization's own basic rules relating principally to itself as an organization rather than to the parliamentary procedure it follows
meeting	an official gathering of an organization's members in order to transact business
rules of order	set of rules for conducting a meeting in an organized and efficient manner

- Allow the majority to rule while respecting the rights of the minority
- Allow equal rights for all members or participants
- Protect the rights of individual members
- Protect the rights of the absentee members
- Demonstrate democracy in action
- Allow full and free debate
- Pursue only one item of business at a time

OBJECTIVE 2

Optional Activities/
Resources in
Instructor's Guide

State the function of the gavel.

- The function of the gavel is to exercise authority in support of self-government and orderly procedure.

OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

Identify methods of voting.

WORDS YOU SHOULD KNOW	
minority	less than half
quorum	the number of members needed to be present to legally transact business

☑ **NOTE:** Some methods are more appropriate than others in certain situations, such as large or small assemblies.

- **voice vote** – members vote by saying "aye" or "no"
- **rising vote** – members vote by standing
- **ballot vote** – members cast a secret, written vote
- **roll call vote** -- members vote when their names are called
- **voting by mail** – members send in their vote by mail
- **proxy voting** – a power of attorney is given by one person to another to vote in his or her stead
- **show of hands** – members vote by raising their hands; an alternate method that can be used in place of rising vote in very small assemblies

OBJECTIVE 4

Optional Activities/
Resources in
Instructor's Guide

Discuss types of motions.

WORDS YOU SHOULD KNOW	
motion	a proposal for action

- **main motion** – the basis of all parliamentary procedure; provides a method of bringing business before the assembly for consideration and action; can only be introduced if no other business is pending
- **subsidiary motions** – motions that may be applied to another motion for the purpose of modifying it, delaying action on it, or disposing of it

- **privileged motions** – motions that have no relation to the pending question but are of such urgency or importance that they are entitled to immediate consideration; relate to members and to the organization rather than to particular items of business

- **incidental motions** – motions that arise out of a pending question, out of a question that has just been pending, or relate to the business of the assembly; usually apply to the methods of transacting business rather than to the business itself; have no rank among themselves because they are in order whenever they are incidental to the business of the assembly

- **restorative motions** – motions that bring a question before the assembly for consideration a second or subsequent time

OBJECTIVE 5

Optional Activities/
Resources in
Instructor's Guide

Match types of motions to their correct classifications.

WORDS YOU SHOULD KNOW	
adjourn	to close or terminate a meeting
amend	to alter or change formally
rescind	to remove the legal force

- Privileged

  ☑ **NOTE:** Arranged in order from the highest ranking to the lowest ranking.

  - ☐ Fix the time at which to adjourn
  - ☐ Adjourn
  - ☐ Recess
  - ☐ Raise the question of privilege
  - ☐ Call for the orders of the day

- Main (main motion or main question)

- Subsidiary

  ☑ **NOTE:** Arranged in order from the highest ranking to the lowest ranking.

  - ☐ Lay on the table
  - ☐ Previous question
  - ☐ Limit or extend limits of debate
  - ☐ Postpone definitely (to a certain time)
  - ☐ Commit (refer to a committee)
  - ☐ Amend
  - ☐ Postpone indefinitely

- Incidental
  - ☐ Appeal
  - ☐ Consideration by paragraph
  - ☐ Division of the assembly
  - ☐ Division of a question
  - ☐ Objection to the consideration of the question
  - ☐ Parliamentary inquiry
  - ☐ Point of order
  - ☐ Rescind
  - ☐ Suspend the rules
  - ☐ Withdraw a motion

- Restorative
  - ☐ Reconsider
  - ☐ Take from the table

OBJECTIVE 6

Optional Activities/
Resources in
Instructor's Guide

Match parliamentary procedures to their correct uses during a meeting.

Parliamentary Procedure	Use During Meeting
Main motion	Presents business for action
Postpone indefinitely	Kills the main motion
Lay on the table	Sets a matter aside so more urgent matters can be considered
Amend	Changes or modifies
Commit (refer to a committee)	Lets a few members attend to a matter
Previous question	Stops debate and amendments; orders an immediate vote
Suspend the rules	Sets the rules aside for a specific reason; nothing else can be done during the suspension
Withdraw a motion	Prevents a motion from being voted upon
Objection to consideration of the question	Determines whether a question is in accord with the bylaws
Raise the question of privilege	Attends to the well-being and comfort of the chapter members
Adjourn	Dismisses members from the meeting
Fix the time at which to adjourn	Sets a time for the next meeting
Reconsider	Provides an opportunity to vote a second time on a matter
Parliamentary inquiry	Asks a question relating to parliamentary procedure
Point of order	Calls attention to a procedural error
Appeal	Allows a member to question the decision of the chair
Take from the table	Takes up an item that was laid on the table
Limit or extend limits of debate	Establishes a length of time for discussion
Postpone definitely	Defers a matter for a specified time
Rescind	Cancels action taken by the chapter
Division of the assembly	Questions the chair's decision on a voice vote
Recess	Provides for a break in the meeting or an intermission
Division of a question	Breaks up a question so each resolution can be considered and voted on separately
Call for orders of the day	Keeps the meeting on track; makes the assembly follow the program, agenda, or order of business
Consider by paragraph	Breaks up a question even more than a division of a question; breaks complex questions or resolutions down by paragraph or section so each can be considered separately

OBJECTIVE 7

Required Activities/
Resources
– Transparency Master

Optional Activities/
Resources in
Instructor's Guide

Arrange in order the steps in the progression of a motion (Rule of Eight).

You will see a transparency showing the Rule of Eight.

WORDS YOU SHOULD KNOW	
chair	the presiding officer of the meeting
second	another member agrees that the motion should come before the assembly

1. A member rises and addresses the presiding officer.

   EXAMPLE: "Mr./Madame President. . ."

2. The member is recognized.

3. The member proposes the motion.

   EXAMPLE: "I move that. . ."

4. Another member seconds the motion without rising or addressing the chair.

   EXAMPLE: "Second"

5. The presiding officer states the motion.

   EXAMPLE: "It is moved and seconded that. . ."

6. The assembly debates and/or amends the motion.

7. The presiding officer takes the vote.

   EXAMPLE: "All those in favor say *aye*. Those opposed say *no*."

8. The result of the vote is announced.

   EXAMPLE: "The ayes have it, the motion is adopted, and the chapter will. . ."

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

State the purpose of a motion to amend.

- to modify the wording and, within certain limits, the meaning of a pending motion before the pending motion itself is acted upon.

OBJECTIVE 9

Optional Activities/
Resources in
Instructor's Guide

List ways to amend a motion.

- Inserting or adding

  EXAMPLE: "I move to amend the motion by inserting the word 'personal' before the word 'computer'."

- Striking out

  EXAMPLE: "I move to amend the motion by striking out the words 'not to exceed $1000'."

- Striking out and inserting

  EXAMPLE: "I move to amend the motion by striking out the word 'apple' and inserting the word 'cherry'."

OBJECTIVE 10

Optional Activities/
Resources in
Instructor's Guide

Select from a list the duties of a chapter president.

WORDS YOU SHOULD KNOW	
debate	formal discussion of a motion

- Decide the order of speakers
- Remain impartial
- Restrain speakers within the limits of the rules
- Enforce good decorum in debate
- Decide on points of order
- Avoid influencing a vote by commenting on a motion

OBJECTIVE 11

Optional Activities/
Resources in
Instructor's Guide

List the desired characteristics of a chapter parliamentary procedure team member.

- Desire to work
- Ability to use parliamentary procedure
- Strong, clear voice

- Calm demeanor
- Self-confidence
- Humility
- Dependability and reliability
- Patience

OBJECTIVE 12 **Evaluated on Assignment Sheet 1.**

OBJECTIVE 13 **Evaluated on Assignment Sheet 2.**

OBJECTIVE 14 **Evaluated on Assignment Sheet 3.**

OBJECTIVE 15 **Evaluated on Assignment Sheet 4.**

ASSIGNMENT SHEET 1

PARLIAMENTARY PROCEDURE

B2

Name ______________________________ Score __________

OBJECTIVE 12

Discuss parliamentary procedure motions.

INTRODUCTION

As a member of an FFA chapter, you will be a part of the decision-making body of the chapter. The chapter meeting is a place where chapter business is conducted and where decisions are made. Meetings go more smoothly when correct parliamentary procedures are used.

INSTRUCTIONS

Answer the questions using the table included with this Assignment Sheet which summarizes and classifies the types of motions. Be sure to include information about whether the motion requires a second, is debatable, is amendable, what type of vote is required, and whether the motion can be reconsidered.

Research and Reference
- Locate resources

Functional Reading
- Interpret graphics and symbols

Composition
- Use complete sentences

1. Fix the time at which to adjourn ______________________

____

____

2. Adjourn ______________________________________

____

____

3. Recess ______________________________________

____

____

4. Raise a question of privilege ______________________

____

____

5. Call for the orders of the day

6. Lay on the table

7. Previous question

8. Limit debate

9. Postpone definitely

10. Commit

11. Amend

12. Postpone indefinitely

13. Main motion ____________________

14. Appeal ____________________

15. Consideration by paragraph ____________________

16. Division of the assembly ____________________

17. Division of a question ____________________

18. Objection to the consideration ____________________

19. Parliamentary inquiry ____________________

20. Point of order ____________________

21. Suspend the rules ______________________________

____

____

22. Reconsider ______________________________

____

____

23. Take from the table ______________________________

____

____

24. Rescind ______________________________

____

____

25. Withdraw ______________________________

____

____

Summary of Motions

Kind	Second Required	Debatable	Amendable	Vote Required	Can be Reconsidered
Fix the time at which to adjourn	Yes	No	Yes	M	Yes
Adjourn	Yes	No	No	M	No
Recess	Yes	No	Yes	M	No
Raise a question of privilege	No	No	No	Chair grants	No
Call for the orders of the day	No	No	No	Demand	No
Lay on the table	Yes	No	No	M	No
Previous question	Yes	No	No	$^2/_3$	Yes
Limit debate	Yes	No	Yes	$^2/_3$	Yes*
Postpone definitely	Yes	Yes	Yes	M*	Yes
Commit	Yes	Yes	Yes	M	Yes*
Amend	Yes	Yes*	Yes	M	Yes
Postpone indefinitely	Yes	Yes	No	M	Affirm only
Main motion	Yes	Yes	Yes	M	Yes
Appeal	Yes	Yes*	No	Majority in negative	Yes
Consideration by paragraph	Yes	No	Yes	M	No
Division of the assembly	No	No	No	Demand	No
Division of a question	Yes	No	Yes	M	No
Objection to the consideration	No	No	No	$^2/_3$ opposed	Negative only
Parliamentary inquiry	No	No	No	Chair answers	No
Point of order	No	No	No	Chair rules	No
Suspend the rules	Yes	No	No	$^2/_3$	No
Reconsider	Yes	Yes*	No	M	No
Take from the table	Yes	No	No	M	No
Rescind	Yes	Yes	Yes	M*	Negative only
Withdraw	No	No	No	M	Negative only

* See *Robert's Rules of Order, Newly Revised* for exceptions.

ASSIGNMENT SHEET 2

PARLIAMENTARY PROCEDURE

B2

Name ______________________________ Score __________

OBJECTIVE 13

Answer questions about parliamentary procedure.

INSTRUCTIONS

Research and Reference
- Select useful resources

Functional Reading
- Use content area vocabulary

It takes a great deal of study and practice to learn the correct use of parliamentary procedure. Use your Information Sheet to answer the questions.

1. Name two motions that require a two-thirds vote.
   - ______________________________
   - ______________________________
2. What is the purpose of a motion? ______________________________
   ____
3. What is the purpose of an amendment? ______________________________
   ____
4. Name five motions that do not require a second.
   - ______________________________
   - ______________________________
   - ______________________________
   - ______________________________
   - ______________________________
5. Name four motions that are not amendable.
   - ______________________________
   - ______________________________
   - ______________________________
   - ______________________________

6. Name three ways a motion may be amended.

- ____________________
- ____________________
- ____________________

	Yes	No
7. Is the motion to take from the table debatable?	____	____
8. Does the motion to adjourn have to be seconded?	____	____
9. Does an amendment require a second before it can be discussed?	____	____
10. Is the motion to lay on the table debatable?	____	____
11. Does the motion to suspend the rules require a two-thirds vote?	____	____
12. Is it necessary to rise when seconding a motion?	____	____
13. Is the motion to lay on the table a subsidiary motion?	____	____
14. Is the motion to amend always amendable?	____	____
15. Does the motion to amend always require a second?	____	____
16. Is the motion to amend always debatable?	____	____
17. May the motion to amend be reconsidered?	____	____
18. Does the motion to lay on the table require a second?	____	____
19. Is the motion to lay on the table amendable?	____	____
20. Does the motion to lay on the table require a majority vote?	____	____

	Yes	No
21. Is the motion to adjourn debatable?	____	____
22. May members discuss a motion before it is seconded?	____	____
23. May a motion to refer to a committee be debated?	____	____
24. Is a majority vote required in order to confirm a point of order?	____	____

ASSIGNMENT SHEET 3

PARLIAMENTARY PROCEDURE

B2

Name ____________________ Score __________

OBJECTIVE 14

Process a motion using the Rule of Eight.

INTRODUCTION

Chapter members are responsible for using correct procedures to process a motion that is before the membership. Although it is a simple process, it requires some practice.

INSTRUCTIONS

Research and Reference
- Select useful resources

Functional Reading
- Use content area vocabulary

Write the correct order to process a motion for the situations below.

1. Write the steps necessary to move the main motion, which is "The chapter will have a party on Friday, March 15, at 6:30 P.M."

   a. ____________________

   b. ____________________

   c. ____________________

   d. ____________________

   e. ____________________

   f. ____________________

   g. ____________________

   h. ____________________

2. Write the correct steps to amend the main motion by changing the time from 6:30 P.M. to 7:30 P.M.

   a. ____________________

   b. ____________________

   c. ____________________

   d. ____________________

e. ______________________________

f. ______________________________

g. ______________________________

h. ______________________________

ASSIGNMENT SHEET 4 PARLIAMENTARY PROCEDURE B2

Name ______________________________ Score __________

OBJECTIVE 15

Use parliamentary procedure to conduct or participate in a mock chapter meeting.

INTRODUCTION

To better understand the use of parliamentary procedure, you need to use it in a meeting situation. This activity will help you see how motions are presented and what they are used for. This assignment will help you practice the procedure so you will have a better understanding and will be able to use it more effectively in a meeting situation.

INSTRUCTIONS

Break into groups of four to six people. Begin by selecting a person to act as the chair or president of the group. Each group will represent an FFA chapter holding a general business meeting and will make a presentation of their parliamentary skills in front of the class.

Use one of the following situations or create one of your own to practice and present to the class. Practice making several different types of motions, referring to the Information Sheet as needed for clarification of motions and their uses. Each group should present a minimum of five motions and presentations should last no longer than 10 minutes.

SITUATION 1

Your chapter needs to run a fund-raising project to help pay for the upcoming field trip. You can run only one fundraiser in the time allotted, but there have been several suggestions as to the type of fundraiser you should run. Use parliamentary procedure to conduct a meeting to select your fundraiser for the chapter.

SITUATION 2

Your chapter officers have decided to have a party to promote the chapter to prospective members. The chapter needs to approve the party and determine the date and time, theme, refreshments, and activities. The officers set October 1 at 6:30 P.M. as the date and time for the party. No theme, refreshments, or activities have been determined. There is also a conflict with the date of the party—there is a football game that evening. Use parliamentary procedure to conduct a meeting to decide on details of the party.

Functional Reading
- Use content area vocabulary

Oral Presentation
- Select/use words effectively

Interactive Communications
- Work effectively in a group

General Relating
- Participate in group activities

OBJECTIVE SHEET

GIVING PRESENTATIONS

B3

INTRODUCTION

At many times in your life you may be called upon to give a speech or other presentation. It may be an introduction of another speaker, a thank-you speech for an award you receive, a demonstration of a new product you are selling, or any number of other types of speeches. This unit will help you develop skills for giving presentations and allow you to practice those skills by writing and delivering several types of talks.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Go to your classroom library or your school library and find a magazine that deals with giving presentations. Find an article that deals with public speaking and read it.
WRITING:	Write a one page essay on how the information in the news article might affect your future agribusiness or agriculture in your community.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Define components of communication.
2. Match types of presentations to their correct descriptions.
3. Select from a list guidelines for preparing an effective speech.
4. Arrange in order steps to follow in writing a speech.
5. List resources to use when gathering information for a speech.
6. State rules for using quotations and statistics in a speech.
7. Discuss purposes, parts, and types of outlines.
8. State ways to practice effective delivery.
9. Select from a list ways to increase the effectiveness of a speech.
10. List factors to consider when listening to and evaluating a speech.
11. List organizations to which you might give a speech.
12. List guidelines for presenting welcoming addresses, introductions, and awards.
13. Give a prepared one-minute talk. (Assignment Sheet 1)
14. Select a speech topic and gather information for a prepared speech. (Assignment Sheet 2)
15. Write an outline for a prepared speech. (Assignment Sheet 3)
16. Write an introduction for a prepared speech. (Assignment Sheet 4)
17. Write the body of a prepared speech. (Assignment Sheet 5)
18. Write the conclusion of a prepared speech. (Assignment Sheet 6)
19. Give a prepared speech. (Assignment Sheet 7)
20. Give a demonstration. (Assignment Sheet 8)
21. Give an illustrated talk. (Assignment Sheet 9)
22. Evaluate another student's presentation. (Assignment Sheet 10)

INFORMATION SHEET

GIVING PRESENTATIONS

B3

OBJECTIVE 1

Optional Activities/
Resources in
Instructor's Guide

Define components of communication.

WORDS YOU SHOULD KNOW	
communication	two-way process of speaking and listening; exchange of information

- speaking – using verbal and nonverbal expression to transmit a message to a receiver for a particular purpose

  ☑ **NOTE:** The speaker must use effective verbal skills (proper diction, grammar, pronunciation) as well as effective nonverbal skills (visible body movements, facial expressions, gestures, posture) to communicate a message.

- listening – receiving, processing, and evaluating verbal and nonverbal messages expressed by a sender for a particular purpose

  ☑ **NOTE:** Receiving, processing, and evaluating the speaker's message involves staying alert, resisting distractions, noting nonverbal cues, and concentrating on what the speaker is saying--really hearing the speaker's message.

- message — information, thoughts, and feelings conveyed by the speaker to inform, persuade, or integrate the listener

OBJECTIVE 2

Optional Activities/
Resources in
Instructor's Guide

Match types of presentations to their correct descriptions.

WORDS YOU SHOULD KNOW	
speech	the communication or expression of thoughts in spoken words

- demonstration – presentation illustrating the step-by-step procedure for performing a task or assignment
- extemporaneous speech – speech given on the spur of the moment with little or no prior preparation
- illustrated talk – presentation using visual aids and objects to assist in making a point
- oral report – presentation covering the facts of a speech, report, or written document
- panel discussion – presentation in which three or more individuals discuss a topic from different points of view
- prepared speech – formal presentation following a logical sequence

OBJECTIVE 3

Required Activities/Resources
– Discussion

Optional Activities/Resources in Instructor's Guide

Select from a list guidelines for preparing an effective speech.

Discuss why knowing the audience is so important.

- Know your audience.
- Choose an idea that is interesting to the audience.
- Choose an idea that is striking, different, or unusual.
- Choose information that is current and timely.
- Make the presentation clear to yourself.

  NOTE: Think about logical order.
- Phrase the speech clearly for your audience.
- Explain any new ideas or terms related to the subject or topic.
- Practice giving your speech.

OBJECTIVE 4

Optional Activities/Resources in Instructor's Guide

Arrange in order steps to follow in writing a speech.

1. Select a familiar subject.
2. Research available references.

3. Record key information.

   EXAMPLE: Write your information on 3" x 5" cards.

4. Develop an outline.
5. Write a rough draft.
6. Revise the rough draft.
7. Type or print the final copy.

OBJECTIVE 5

Optional Activities/
Resources in
Instructor's Guide

List resources to use when gathering information for a speech.

WORDS YOU SHOULD KNOW

Reader's Guide to Periodical Literature	monthly publication that identifies current magazine articles; can be found in most libraries

- Check your personal books for information.
- Review back issues of trade and business magazines.
- Check school and public libraries.
- Use the *Reader's Guide to Periodical Literature* to locate magazine articles.
- Write to associations.
- Interview a resource person.

  EXAMPLES: President of a civic club, a business owner, a local politician

- Contact appropriate federal, state, or county government agencies.
- Check educational facilities and their publications.
- Check newspapers.

  ☑ **NOTE:** Many newspaper editors have very useful information.

OBJECTIVE 6

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

State rules for using quotations and statistics in a speech.

Discuss the question "What is plagiarism?"

WORDS YOU SHOULD KNOW	
context	interrelationship of words in a paragraph or sentence that makes clear their exact meanings
plagiarism	the act or instance of stealing and passing off the words of someone else as one's own
quotation	statement in which another person's words are cited exactly
statistics	data in the form of facts and figures

☑ **NOTE:** Quotations and statistics can help you prove a point or supply background information for your audience.

- Use quotations and statistics only when they are needed to make a point.

  ☑ **NOTE:** Limit the use of quotations in your speech; the audience wants to hear your opinions, not another author's opinions.

- Make sure the source and date of information are accurate.

  ☑ **NOTE:** It is common courtesy to cite the author's name, and doing so often helps support your information.

- Keep the true meaning of the quotations and statistics.

  ☑ **NOTE:** Use quotations and statistics in their original context.

OBJECTIVE 7

Required Activities/
Resources
– Transparency Masters
1-3

Optional Activities/
Resources in
Instructor's Guide

Discuss purposes, parts, and types of outlines.

You will see transparencies which show outlines of speeches.

WORDS YOU SHOULD KNOW	
outline	logical organization of ideas that forms the framework of any story, essay, or other form of information

- **Purposes**
  - ◻ To help you recognize strengths and weaknesses in the speech
  - ◻ To help you organize and develop your ideas
  - ◻ To help you save time when writing the speech
  - ◻ To help you keep your speech relevant
- **Parts**
  - ◻ **introduction** — the beginning of your speech. It should attract and motivate your audience. The introduction to a speech should get the audience's attention, state the purpose, relate the importance of the topic to the audience, and preview the main points to be covered.
  - ◻ **body** — the central theme of the speech. It carries the main idea to your audience. The body of a speech carries the speaker's message. It consists of the main points, subdivisions, and supporting details. Its main objective is to develop fully the theme of your presentation.
  - ◻ **conclusion** — the end of your speech. It reviews or summarizes the main points of your speech or asks for action. The end of a speech is just as important as the beginning and must be accorded its proper allotment of preparation. Your conclusion must do two things: 1) give your audience a feeling of completeness or satisfaction in terms of your having done what you set out to do, and 2) center attention on the whole idea of your speech rather than on any part of it. In short, it must drive home the central message of your speech.

FIGURE 1

Principal Parts of an Outline

I. **INTRODUCTION:**
Attracts the attention of the audience and prepares them for what they will hear

II. **BODY:**

Develops the main idea; carries the main points, subdivisions, and supporting details of your message

III. **CONCLUSION:**

Summarizes, reviews, urges action; drives home your central idea

- **Types**

  ☐ **topical** — outline style using key words or phrases to express the order of the thoughts to be presented in a speech

  ☐ **sentence** — outline style using complete sentences to express the order of the thoughts to be presented in a speech

  ☑ **NOTE:** The sentence outline is more complete and, therefore, is usually a better outlining style for beginning speakers to use.

FIGURE 2

Topical outline style

TITLE

Disease Cures

I. **INTRODUCTION**

Importance of research

II. **BODY**

A. **First main point**

Identification of cause of disease

1. Subpoint 1
2. Subpoint 2

B. **Second main point**

Isolation of disease

1. Subpoint 1
2. Subpoint 2

III. **CONCLUSION**

Possible cure

FIGURE 3

Sentence outline style

TITLE

Finding Cures for New Diseases

I. **INTRODUCTION**

Research of a new disease is essential to finding a cure.

II. **BODY**

A. **First main point**

The initial research begins with locating the cause of the disease.

1. Subpoint 1
2. Subpoint 2

B. **Second main point**

After finding the cause, the disease is isolated and tested.

1. Subpoint 1
2. Subpoint 2

III. **CONCLUSION**

The result of the testing is a possible cure for the disease.

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

State ways to practice effective delivery.

- Practice your speech in front of a mirror.
- Use a tape or video recorder for evaluating your delivery.
- Practice giving your speech in front of another person.
- Ask a professional to critique your presentation.

OBJECTIVE 9

Optional Activities/
Resources in
Instructor's Guide

Select from a list ways to increase the effectiveness of a speech.

WORDS YOU SHOULD KNOW	
articulate	to talk distinctly
attitude	position assumed for a specific purpose
fluency	quality of being effortlessly smooth and polished
gesture	facial expression or body motion used to emphasize
poise	easy, self-assured manner
pronounce	to say or speak words correctly

- Maintain eye contact.
- Use gestures.
    - ☐ To emphasize specific thoughts
    - ☐ To convey attitudes or moods
    - ☐ To express thoughts and feelings

EXAMPLES: Use your hands; vary your facial expression.

☑ **NOTE:** Be yourself, but do not overact. Overacting focuses the audience's attention on the speaker, not on the speech.

- Maintain good posture.
- Use voice control.
    - ☐ Speak clearly, slowly, and in a pleasant tone.
- Use visuals if they are appropriate.
- Be neatly groomed and appropriately dressed.
- Be prepared.

  ☑ **NOTE:** The best way to be prepared is to practice your speech until you know it well and can deliver it smoothly.

- Recognize that some fear is normal; do not get too upset.
- Be enthusiastic and confident.
- Practice ways to reduce nervousness.
    - ☐ Practice relaxation and visualization exercises before giving your presentation.

      EXAMPLE: Tighten and release muscles that are tense; open your mouth wide and then close your mouth, repeat; clinch your hands and then open them; shake your hands at your sides.

      EXAMPLE: Picture a pleasant scene in your mind such as a deserted, tropical island beach. Imagine the sound of the waves splashing at your feet as you walk along the beach. Let yourself relax and enjoy the sights and sounds of the island.

    - ☐ Control your breathing.

      EXAMPLE: Inhale deeply, hold your breath for a few seconds, then exhale slowly.

OBJECTIVE 10

Optional Activities/
Resources in
Instructor's Guide

List factors to consider when listening to and evaluating a speech.

Content of speech

- Important and appropriate subject
- Suitable material
- Accurate statements included
- Clear purpose

Composition of speech

- Organized content
- Appropriate language
- Unified thought
- Proper sentence structure
- Logical development
- Accomplished purpose

Speaker's voice quality

- Proper pitch
- Proper articulation
- Proper volume
- Proper pronunciation

Speaker's stage presence

- Appropriate attitude
- Good poise and body posture
- Ease before audience
- Appropriate personality

Speaker's personal appearance

- Neat appearance
- Appropriate dress

Speaker's power of expression

- Fluent
- Direct
- Proper emphasis
- Communicated message
- Sincere

Speaker's response to questions

- Originality
- Familiarity with the subject
- Ability to think quickly

General effect of the speech

- Interesting
- Understandable
- Convincing
- Pleasing
- Captivating

OBJECTIVE 11

Optional Activities/
Resources in
Instructor's Guide

List organizations to which you might give a speech.

- Optimist Club
- Lions Club
- Kiwanis Club

- Chamber of Commerce
- Jaycees
- Licensed Practical Nurses Association
- Sales and Marketing Associations
- Vocational Associations
- League of Women Voters
- State Education Association
- Rotary Club
- Toastmasters
- Secondary School Principals
- State Board of Education
- Local School Board
- Chief School Officers
- Parent Teacher Association
- American Legion
- Century Club
- Veterans of Foreign Wars
- Labor Unions (AFL-CIO, UAW, IGW, etc.)
- Medical Society
- Youth Organizations (School, Vocational, Special Programs, Boy Scouts, etc.)
- Better Business Bureau
- Agency to Reduce Crime
- Women's Clubs

- Masonic Lodge
- Knights of Columbus
- Retail Merchants' Association
- Public School Assemblies
- City Council Meetings
- House of Representatives and/or Senate
- Local Business or Industry Board Meetings

OBJECTIVE 12

List guidelines for presenting welcoming addresses, introductions, and awards.

Optional Activities/ Resources in Instructor's Guide

- Welcoming addresses
  - ☐ State the purpose of the meeting.
  - ☐ State your appreciation for the audience's attendance.
  - ☐ Be brief.
- Introductions
  - ☐ Give brief background information about the speaker.

    EXAMPLES: High school, organizations, family, hobbies, education, occupations, etc.
  - ☐ State the title of the presentation (if possible).
  - ☐ State the speaker's name last.
  - ☐ Keep the introduction under 1½ minutes.
  - ☐ Lead the applause.
  - ☐ Remain at the podium until the speaker arrives at the podium.
  - ☐ Go behind the speaker when returning to your seat.

- Awards
    - Explain the importance of the award.
    - Introduce the recipient.
    - Describe the recipient's accomplishments.
    - Shake the recipient's *right* hand while handing the award with your left hand.

      ☑ **NOTE:** This procedure requires your hands to cross; therefore, you should practice the motion several times prior to the presentation to avoid embarrassment.
    - Encourage the recipient to face the audience.
    - Lead the applause.

OBJECTIVE 13 **Complete Assignment Sheet 1.**

OBJECTIVE 14 **Complete Assignment Sheet 2.**

OBJECTIVE 15 **Complete Assignment Sheet 3.**

OBJECTIVE 16 **Complete Assignment Sheet 4.**

OBJECTIVE 17 **Complete Assignment Sheet 5.**

OBJECTIVE 18 **Complete Assignment Sheet 6.**

OBJECTIVE 19 **Complete Assignment Sheet 7.**

OBJECTIVE 20 **Complete Assignment Sheet 8.**

OBJECTIVE 21 **Complete Assignment Sheet 9.**

OBJECTIVE 22 **Complete Assignment Sheet 10.**

ASSIGNMENT SHEET 1

GIVING PRESENTATIONS B3

Name ______________________________ Score __________

OBJECTIVE 13 **Give a prepared one-minute talk.**

INTRODUCTION One of the best and easiest ways to begin preparing a presentation is to select a topic with which you are very familiar.

INSTRUCTIONS

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Oral Presentation
- Make informative presentations
- Use good speaking techniques
- Select/use words effectively

Part 1

Prepare a one-minute talk about yourself, using the situation below.

You have just been informed by your instructor that you are to meet a new chapter member at the airport at 8:00 p.m. You have never met this person. Describe yourself in detail so that the person will be able to identify you in the crowd at the airport.

Use the space below to prepare your remarks.

____

____

____

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____

Part 2

Give your prepared talk. Remember that your talk is to be one minute in length.

ASSIGNMENT SHEET 2

GIVING PRESENTATIONS

B3

Name ______________________________ Score __________

OBJECTIVE 14

Select a speech topic and gather information for a prepared speech.

INTRODUCTION

Perhaps the most difficult part of writing a speech is getting started. Selecting a topic and gathering information on that topic can be difficult. In this Assignment Sheet you will be guided through these two "getting started" phases of speech writing.

INSTRUCTIONS

Reading Comprehension
- Select useful resources
- Locate resources
- Use standard references

Research
- Take notes
- Use note cards

Teamwork/Cooperative
- Generate ideas

Part 1

Make a list of subject areas that you find interesting. Write down as many topics as you can think of. Then review the list and select the topic for your speech.

Possible topics:

____

____

____

____

____

____

____

____

____

____

____

____

____

Part 2

Gathering information

Gathering information to develop your speech topic consists of two stages: 1) selecting possible reference materials and 2) recording key information from those references. To help you through these stages, follow the directions. When you have completed this activity, go on to Part 3 of the Assignment Sheet.

Reread the Information Sheet concerning guidelines to follow when gathering information for a speech; then list possible references that may help you in finding background information to develop your speech topic. List those reference sources on the blanks below.

Possible reference sources:

Part 3

Recording key information from your references

Recording key information from your resource material or note-taking involves quoting another person's words or summarizing another person's thoughts. This must be done in such a way that the idea is clear to you and the original thought has not been distorted.

Read the following guidelines for recording information. Then, using the sources you listed in Part 2, take notes to help you develop your speech topic. Hand in your notes to your instructor for evaluation.

Guidelines for Recording Information

- Record information on 3" x 5" cards.
- If you are in doubt about whether or not to take a note, take it. It is easier to discard a note you do not need than to relocate a source.
- Summarize information in your own words without distorting the original thought.
- Do not copy information word-for-word from the original unless your source concisely sums up a great deal of information and you want to incorporate that quotation into your speech.
- If you copy a quotation, make sure you enclose it in quotation marks so later you will know that the note was quoted verbatim.
- Cite on each card the source and date of the information you have recorded.

ASSIGNMENT SHEET 3

GIVING PRESENTATIONS

B3

Name ______________________________ Score __________

OBJECTIVE 15

Write an outline for a prepared speech.

INSTRUCTIONS

After gathering information from available sources, the next step in developing a speech is to make an outline. After you have reviewed the notes you took from your reference material, outline your speech, using the space below. Use either the topic or sentence outline style discussed in the Information Sheet. Have your instructor evaluate the completed outline.

Composition
- Develop preliminary outline

Research
- Outline material

TITLE

____

I. **INTRODUCTION**

____

____

II. **BODY**

A. **First main point**

____

____

1. Subpoint 1

____

____

2. Subpoint 2

____

____

B. **Second main point**

____

____

1. Subpoint 1

____

____

2. Subpoint 2

____

____

III. **CONCLUSION**

____

____

ASSIGNMENT SHEET 4

GIVING PRESENTATIONS

B3

Name ______________________________ Score __________

OBJECTIVE 16

Write an introduction for a prepared speech.

INTRODUCTION

The introduction sets the stage for your speech. Select your words carefully. The introduction should be written in such a manner that the audience can identify with your speech. Make your sentences have meaning.

INSTRUCTIONS

Using the outline you developed in Assignment Sheet 3, write the introduction to your speech. You may use the space below for your introduction. If more space is needed, use the back of this page. Have your instructor evaluate your completed introduction.

Speech title: ____

Introduction: ____

____

____

____

____

____

____

____

____

____

____

____

____

Language
- Use standard grammar spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences
- Use introductory/closing paragraphs

Cognitive Activities
- Create a finished product

ASSIGNMENT SHEET 5

GIVING PRESENTATIONS

B3

Name ______________________ Score __________

OBJECTIVE 17

Write the body of a prepared speech.

INTRODUCTION

The body of your speech is the heart of the speech. This part should be filled with useful information. The speech should flow from one point to another. Use words that have meaning and words that you feel comfortable using. If you use dates and figures, make sure that the sources are given.

INSTRUCTIONS

A considerable amount of time should go into preparing this part of your speech. Using the outline you prepared in Assignment Sheet 3, write the body of your speech. Use the following pages for writing your speech. Read through your speech and make modifications as needed. Have your instructor evaluate the completed body of your speech.

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences
- Compose essays

Cognitive Activities
- Create a finished product

Speech title: ______________________

Body: ______________________

Name ______________________ Score __________

OBJECTIVE 18

Write the conclusion of a prepared speech.

INTRODUCTION

The conclusion should be short and closely tied to the text of your speech. The conclusion should summarize the key points of your speech and call for action if appropriate.

INSTRUCTIONS

Using the outline you developed in Assignment Sheet 3, write the conclusion to your speech. Use the space below to write your conclusion. If more space is needed, continue on the back of this page. Have your instructor evaluate your completed conclusion.

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences
- Use introductory/closing paragraphs

Cognitive Activities
- Create a finished product

Speech title: ______________________

Conclusion: ______________________

ASSIGNMENT SHEET 7

GIVING PRESENTATIONS

Name ______________________________ Score __________

OBJECTIVE 19

Give a prepared speech.

INSTRUCTIONS

The time has arrived for you to prepare the final draft and give your speech. Use Assignment Sheets 4, 5, and 6 as your rough draft. Rewrite your speech, making the introduction, body, and conclusion fit together. Review the speech closely to make sure that it flows. Rework any unfavorable words or incomplete statements. Become comfortable with your speech.

Attach a copy of your final draft to this Assignment Sheet before turning it in to your instructor.

The following points may assist you.

- Study and restudy your speech. Make sure that you know your speech. Memorize it if necessary.

  ☑ **NOTE:** A good way to memorize your speech is by reading it aloud several times.

- Practice your speech in front of a mirror. This will allow you to practice the use of gestures.
- Tape or video record your speech and play it back. This will give you an opportunity to hear how you sound or to see and hear how you deliver your speech.
- Practice your speech before friends or family members and ask for suggestions to improve the content and delivery.

Now that you have studied it, you are ready to deliver your speech. The following information will assist you in your delivery.

- Be neatly groomed.
- Be prepared.
- Recognize that some fear is normal.

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences
- Use introductory/closing paragraphs
- Proofread and edit

Oral Presentation
- Make informative presentations
- Use good speaking techniques
- Select/use words effectively
- Use effective body language
- Present appropriate appearance

Cognitive Activities
- Create a finished product

- Maintain eye contact.
- Use gestures.
- Maintain good posture.
- Let all important actions or gestures be seen clearly.
- Speak clearly and in a pleasant tone of voice; use voice control.

ASSIGNMENT SHEET 8 — GIVING PRESENTATIONS — B3

Name ______________________________ Score __________

OBJECTIVE 20

Give a demonstration.

INSTRUCTIONS

Demonstrations are much easier to develop and present than other types of presentations. Your demonstration should be no longer than five minutes in length.

Part 1

Select a topic that interests you and give a demonstration. Use the following work sheets to help you prepare your presentation.

TOPIC: ____

1. What tools and equipment do you need?

- ____
- ____
- ____
- ____
- ____
- ____
- ____
- ____
- ____
- ____

Language
- State ideas clearly

Oral Presentation
- Make informative presentations
- Use good speaking techniques
- Select/use words effectively
- Present appropriate appearance
- Integrate audio and/or visual materials into oral presentations

Cognitive Activities
- Create a finished product

2. What visuals do you need?

- ____
- ____
- ____
- ____
- ____
- ____
- ____
- ____
- ____
- ____

3. Where will you present the demonstration? ____________________

☑ **NOTE:** Remember, everyone in the room must be able to see your presentation. Always check the room arrangement before giving your presentation.

4. Having identified your topic and listed the equipment and tools needed, prepare your presentation. Use the following information to assist you.

- Make sure that your topic is current and that you are thoroughly familiar with the content.
- Develop your demonstration.
- Practice your demonstration and revise it as necessary.
- Review the time frame; your presentation should not run over five minutes.
- Make sure that the visuals used during your presentation are large enough to be seen by all people in attendance.
- Make sure that all your tools and equipment are available, in working condition, and clean.

- Check the meeting place several days prior to giving the presentation to view the seating arrangement and the equipment available.

- Make sure that safety procedures are followed while giving the demonstration.

Part 2

Outline what you will cover in your demonstration. List the steps of your presentation and where your visuals will be presented. Use the space below to outline your demonstration.

Part 3

This part of the assignment will be used to evaluate your demonstration. Read through the evaluation carefully. It will assist you in knowing what points to check before giving your demonstration.

1. What was the length of the presentation? ____________________

2. Did the demonstration follow a logical sequence?
Yes _____ No _____

3. Did the presenter speak in a clear, distinct tone?
Yes _____ No _____

4. Was the demonstration interesting? Yes _____ No _____

5. Could the demonstration be seen clearly? Were all visuals used large enough to be seen? Yes _____ No _____

6. Were proper safety procedures followed? Yes _____ No _____

If no, what safety procedures were not followed? ____________

____

____

____

____

7. Did the presenter have all of the necessary tools and equipment?

If no, what tools were missing? ______________________________

8. Rate the presenter: Excellent _____ Good _____ Fair _____
Poor _____

9. What were the strengths of the presentation? ____________

____

____

____

____

10. What were the weaknesses of the presentation?

____

____

____

____

____

11. In what ways could the presentation have been improved?

____

____

____

____

ASSIGNMENT SHEET 9

GIVING PRESENTATIONS

B3

Name ______________________________ Score __________

OBJECTIVE 21

Give an illustrated talk.

INSTRUCTIONS

You have been asked to give a three-minute illustrated talk. Use interesting and relevant visuals when giving an illustrated talk. Select your visual aids carefully because their use sets this type of talk apart from other types of speeches.

Language
- State ideas clearly

Oral Presentation
- Make informative presentations
- Use good speaking techniques
- Select/use words effectively
- Present appropriate appearance
- Integrate audio and/or visual materials into oral presentations

Cognitive Activities
- Create a finished product

Part 1

1. Select a topic that interests you.

   TOPIC: ______________________________

2. Determine where the talk will be given. ____________________

   ☑ **NOTE:** People must be able to see your visuals during the talk. Check the room arrangement before giving your talk.

3. Select and prepare visuals from the list below. Select types of visuals you will be using and write a brief description of each.

   - Charts ______________________________

     ____
   - Models ______________________________

     ____
   - Posters ______________________________

     ____
   - Photographs ______________________________

     ____

- Actual objects ____

  ____

- Transparencies ____

  ____

- Other (specify) ____

  ____

4. List the equipment you will need.

   - ____
   - ____
   - ____

Now that you have selected your topic, identified where the talk will be given, and determined the types of visuals you will need, you can start preparing your talk. The following information may be helpful to you.

- Make sure that the topic you selected is timely and that you feel comfortable with the topic.

- Review the time frame. The talk should not run over three minutes.

- Your visuals are the key to your presentation. Make sure they are large enough to be seen at the back of the room. Colors make your visuals stand out better and illustrate selected points.

- Arrange your visuals according to the points you wish to make.

- Practice your talk several times, paying close attention to your time.

- Handle your visuals skillfully.

  ☐ Address the visual and the audience.

  ☐ Using the pointer, point to the visual to illustrate specific points.

  ☐ Place the visual at the back of the stack or off to the side and continue with your talk.

Part 2

Use the space below to outline your talk. Be sure to include your visuals in your outline.

Part 3

This part of the Assignment Sheet will be used to evaluate your illustrated talk. Read through the evaluation carefully. It will assist you in knowing what points to check before giving your talk.

1. What was the length of the talk? ____________________

2. Did the talk hold the attention of the audience?

   Yes _____ No _____

3. Did the talk follow a logical sequence? Yes _____ No _____

4. Could the visuals be clearly seen from the back of the room?

   Yes _____ No _____

5. Were the visuals appropriate for the topic? Yes _____ No _____

6. Rate the use of visuals: (Check the most appropriate box.)

   Over used ☐

   Used appropriately ☐

   Used very little ☐

7. Did the presenter handle the visuals skillfully?

   Yes _____ No _____

8. Rate the speaker's delivery.

   Voice

   _____ Voice was too loud

   _____ Voice was too soft

   _____ Voice was appropriate

   _____ Speaker spoke too fast

   _____ Speaker spoke in monotone

   Comments: ____

   ____

Stage presence

Was the presenter dressed appropriately?

Yes _____ No _____

Comments: ____

____

Did the presenter exhibit good poise and posture?

Yes _____ No _____

Comments: ____

____

Was the presenter at ease before the audience?

Yes _____ No _____

Comments: ____

____

Was the talk interesting, understandable, convincing, and pleasing? Did it hold the audience's attention?

Comments: ____

____

9. What were the strengths of the talk? ______________________

____

____

____

____

____

10. What were the weaknesses of the talk?______________________

____

____

____

____

____

11. Rate the illustrated talk.

Excellent ____ Good ____ Fair ____ Poor ____

12. In what ways could the talk have been improved?____________

____

____

____

____

____

ASSIGNMENT SHEET 10 — *GIVING PRESENTATIONS*

B3

Name ______________________________ Score __________

OBJECTIVE 22 **Evaluate another student's presentation.**

INTRODUCTION

In Objective 10, you studied the factors to consider when listening to and evaluating a speech. The items listed in the information sheet were based on the score sheet used by the judges at public speaking contests. In this Assignment Sheet, you will evaluate another student's speech. Remember that evaluating someone else will also assist you in evaluating your own speeches.

INSTRUCTIONS

Read the entire Assignment Sheet before evaluating the speech. Evaluate another student's speech by following the directions and by filling in the blanks below.

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Listening
- Apply active listening skills

Teamwork/Cooperative
- Give/receive feedback

Cognitive Activities
- Collect/record information

1. Record the speaker's name on the blank line below.

   ____

2. Record the title of the speech on the blank line below.

   ____

3. List the main point(s) the speaker made in the introduction to the speech.

   ____

   ____

   ____

4. List the main point(s) the speaker made in the body of the speech.

   ____

   ____

   ____

   ____

5. List the main point(s) the speaker made in the conclusion of the speech.

____

____

____

6. Briefly state the topic of the speech on the lines below.

____

____

7. Briefly discuss the speaker's voice quality. (Was the speaker's voice loud enough? Was the voice pitch pleasing? Was articulation clear and pronunciation correct?

____

____

8. Discuss the speaker's stage presence and personal appearance. (Was the speaker confident, poised, and at ease before the audience?)

____

____

____

9. Briefly discuss the speaker's power of expression. (How fluent was the speaker? Did the speaker convey the thought and meaning intended? Did the speaker seem sincere?)

____

____

____

10. Briefly discuss the speaker's ability to answer questions on the speech.

____

____

____

11. Discuss the general effect of the speech upon the audience.

12. Any additional comments:

OBJECTIVE SHEET

ORIENTATION TO FFA RECORD KEEPING

C1

INTRODUCTION

Record keeping is essential to any business or organization. It provides material to show progress or need for improvement. Detailed planning is necessary for the success of any business. Your experience with record keeping can provide the pathway to a full time career in your future.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING: Go to your classroom library or your school library and find a magazine that deals with agriculture or accounting. Find an article that deals with record keeping in agriculture and read it.

WRITING: Write a short essay on how the information in the news article might affect your future agricultural enterprises.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Describe types of Supervised Agricultural Experience Programs.
2. State reasons for participating in a Supervised Agricultural Experience Program.
3. Select from a list points to consider when choosing a Supervised Agricultural Experience Program.
4. List factors to consider in developing a plan for a long-term Supervised Agricultural Experience Program.
5. Select an occupational objective. (Assignment Sheet 1)
6. Prepare a plan for a long-term Supervised Agricultural Experience Program. (Assignment Sheet 2)
7. Develop an agreement for a Supervised Agricultural Experience Program in production agriculture. (Assignment Sheet 3)

INFORMATION SHEET

ORIENTATION TO FFA RECORD KEEPING

C1

OBJECTIVE 1

Describe types of Supervised Agricultural Experience Programs.

Optional Activities/
Resources in
Instructor's Guide

WORDS YOU SHOULD KNOW

enterprise	category of the total business for which individual records are kept as a part of the total record keeping system EXAMPLES: Swine, beef, wheat, dairy, agribusiness, land, equipment
Supervised Agricultural Experience Program	part of the agricultural education program in which students participate in production agriculture or agribusiness learning experiences to gain knowledge, skill, income, and on-the-job experience under the supervision of the vocational agriculture instructor
scope	extent, size, or volume of the SAE Program or of an enterprise in the SAE Program

- Ownership – The student has personal ownership of the materials or other inputs required for the enterprise(s)

  EXAMPLES: production agriculture – student-owned and operated farming or ranching program including livestock or hay production

  agribusiness – student-owned and operated agricultural enterprises other than production agriculture

- Placement – The student is placed in production agriculture, in agribusiness, in school laboratories, or in community facilities to gain practical agricultural experience and earn wages.

  EXAMPLES: The student is employed at the local co-op or dairy.

  ☞ **NOTE:** The students do not own the facilities, equipment, or products but work for wages.

OBJECTIVE 2

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

State reasons for participating in a Supervised Agricultural Experience Program.

Discuss the benefits gained from a Supervised Agricultural Experience Program.

- learn responsibility
- gain experience
- earn money
- develop management abilities
- prepare for a career
- learn record keeping
- learn skills or improve skills in agriculture
- become established in farming or an agribusiness occupation
- develop self-discipline

OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

Select from a list points to consider when choosing a Supervised Agricultural Experience Program.

- personal interest
- background and knowledge
- finances available
- facilities available

  ☑ **NOTE:** Adequate facilities will be necessary for a production agriculture project.

- transportation needs and availability
- local agricultural education department requirements

OBJECTIVE 4

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

List factors to consider in developing a plan for a long-term Supervised Agricultural Experience Program.

? Discuss the length of time allowed for completion of your program.

- occupational objective area
- facilities and finances available, as needed, for expansion
- net income expected
- degree of independence expected
- anticipated scope of program in four years
- areas of interest
- support of parents or other parties

OBJECTIVE 5 **Complete Assignment Sheet 1.**

OBJECTIVE 6 **Complete Assignment Sheet 2.**

OBJECTIVE 7 **Complete Assignment Sheet 3.**

ASSIGNMENT SHEET 1

ORIENTATION TO FFA RECORD KEEPING

C1

Name ______________________ Score __________

OBJECTIVE 5

Select an occupational objective.

INTRODUCTION

As you begin your agricultural career, you should have in mind an appropriate area of interest. An occupational objective is a person's career goal. The occupational objective is usually given a corresponding code number which is referred to as the occupational objective code.

INSTRUCTIONS

Study the list of occupational objectives and their descriptions. Choose the objective and code number that most closely matches your area of interest, and record it at the end of the Assignment Sheet. If you are uncertain about your particular interest, choose Agricultural Production, General 010301. You will have an opportunity to change your occupational objective later in the agricultural education program.

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Job Search/Selection
- Investigate employment prospects of a career field/occupation
- Compare/evaluate career options
- Develop personal career path

OCCUPATIONAL OBJECTIVE	CODE	DESCRIPTION
Agricultural Production, General	010301	Planning and economically using facilities, land, water, machinery, chemicals, finance, and labor in the production of plant and animal products
Agricultural Electrification, Power, and Controls	010202	Safe use of electricity, electrical power, equipment, and automatic controls
Agricultural Mechanics, Construction and Maintenance Skills	010203	Selecting, safely using, and maintaining hand and power tools, arc and acetylene welding equipment, and construction materials
Agricultural Power Machinery	010204	Selecting, operating, servicing, maintaining and repairing a variety of agricultural power units and agricultural machinery and equipment to include gas, diesel, and electrical units; welding; refrigeration; hydraulics and other power systems
Agricultural Structures, Equipment and Facilities	010205	Planning, selecting materials for constructing, utilizing, and maintaining agricultural structures, equipment, and environmental facilities such as barns, sheds, milking parlors, manure and other waste handling structures and equipment, forage and grain storage structures, and greenhouses
Soil and Water Mechanical Practices	010206	Implementing soil and water management by surveying, planning, laying out, constructing, using, and maintaining irrigation, drainage, and run-off systems
Animal Production	010302	Selection, breeding, physiology, nutrition, health, housing, feeding, and marketing of animals such as dairy cattle, beef cattle, horses, swine, sheep, poultry, bees, rabbits, cats, dogs, and earthworms
Crop Production	010304	Production of all types of marketable agricultural crops; soils work and all types of plant work and identification, including use of chemicals in plant pest and disease control
Food Products	010402	Processing food products such as meat, fish, poultry, eggs, dairy products, fruits and vegetables, and cereal grains for sale and consumption

OCCUPATIONAL OBJECTIVE	CODE	DESCRIPTION
Nonfood Products	010403	Processing nonfood products, such as cotton, tobacco, and wool
Agricultural Services	010502	Providing agricultural services such as custom work, equipment operation and maintenance, management and finance; includes small animal services such as breeding, horseshoeing, pet services, and animal hospital services
Agricultural Supplies Marketing	010503	Purchasing, storing, grading, transporting, and marketing agricultural supplies such as feeds, seeds, fertilizers, chemicals, machinery and parts, and products such as livestock and grains
Animal Grooming	010504	Grooming animals by clipping, bathing, cutting and conditioning hair, and caring for hooves and nails
Animal Training	010505	Teaching animals to obey commands, competing in shows, and performing all types of activities necessary for animal competition and performances
Horseshoeing	010506	Selecting and fitting shoes; shaping and nailing shoes to animals' hooves
Aboriculture	010602	Cultivating and maintaining wood plants and trees used for decoration and shade purposes
Floriculture	010603	Producing flowers, foliage, and related plant materials in fields and greenhouses for ornamental purposes; and arranging, packaging, and marketing these materials
Greenhouse Operation and Management	010604	Producing plants under glass and in other artificial environments
Landscaping	010605	Locating, planting, and maintaining turf, plants, shrubs, or devices for the beautification of home grounds or other areas of human habitation and recreation
Nursery Operation and Management	010606	Producing turf, plants, shrubs, and trees for the purpose of transplanting or propagating them

OCCUPATIONAL OBJECTIVE	CODE	DESCRIPTION
Turf Management	010607	Establishing, managing, and maintaining grassed areas for ornamental or recreational purposes
Forest Products Utilization	030403	Selecting, grading, and marketing forest raw materials for conversion to consumer goods; maintenance, safe operation, and repair of related equipment
Logging	030405	Harvesting and transporting trees as a crop; maintaining, safely operating, and repairing logging equipment and machinery

ASSIGNMENT SHEET 2

ORIENTATION TO FFA RECORD KEEPING

Name ______________________________ Score __________

OBJECTIVE 6

Prepare a plan for a long-term Supervised Agricultural Experience Program.

INTRODUCTION

In order to gain experience, it is necessary to set some goals and expectations. These goals should include expansion and broadening into other areas when possible.

The long-term Supervised Agricultural Experience Program is usually a four-year plan beginning in the ninth grade with Agriculture I. It should outline the scope of each enterprise for each year and reflect plans to broaden into new enterprises through the agricultural education career. The enterprise is the category of the total business for which individual records are kept as part of the total record keeping system. Any agricultural related service performed or nontraditional production agricultural product for which income is received would be considered agribusiness.

INSTRUCTIONS

Study the sample plan. On the form that follows, write your own plan for the long-term Supervised Agricultural Experience Program. Organize your plan by school year and by individual enterprise(s). After listing your enterprises and completing your long-term plan, show this Assignment Sheet to your instructor for approval. Then transfer the information to your FFA *Record Book.*

My chosen or planned enterprise(s) is/are:

____

____

____

____

____

____

____

Reading Comprehension
- Gain factual information
- React to written material

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

General Relating
- Identify personal values/attitudes

STUDENT'S PLAN FOR A LONG-TERM SUPERVISED AGRICULTURAL EXPERIENCE PROGRAM

Check all that apply.

19 93-94 ☐ Lab Experience ☐ Wage Earning ☐ Ownership

Swine: I plan to purchase a bred gilt in the fall of my freshman year, and to keep one or two gilt pigs from the first litter to expand my swine breeding program.

19 94-95 ☐ Lab Experience ☐ Wage Earning ☐ Ownership

Swine: I plan to purchase my own boar in the fall and possibly start doing outside breeding to provide income for my swine enterprise. I plan to expand to breeding six of my own sows by the Spring of 1995. I also plan to purchase adequate equipment as my swine enterprise grows.

Wheat: I plan to start a crop-share wheat enterprise with my parents in the fall of 1994.

19 95-96 ☐ Lab Experience ☐ Wage Earning ☐ Ownership

Swine: Continue with swine enterprise at the same level, with a farrowing to finishing operation.

Wheat: Continue crop-share enterprise with parents and try to locate land to cash rent for additional wheat acreage.

Beef: Purchase stocker calves for wheat pasture; sell the calves in the Spring.

Agribusiness: Provide labor to parents in exchange for farm equipment usage.

19 96-97 ☐ Lab Experience ☐ Wage Earning ☐ Ownership

Swine: Continue and expand up to 10 sows as profits allow.

Wheat: Continue previous year's level and possibly cash rent additional acres.

Beef: Increase number of stockers as wheat pasture is available.

Agribusiness: Continue labor exchange arrangement with parents.

19________ ☐ Lab Experience ☐ Wage Earning ☐ Ownership

STUDENT'S PLAN FOR A LONG-TERM SUPERVISED AGRICULTURAL EXPERIENCE PROGRAM

Check all that apply.

19________ ☐ Lab Experience ☐ Wage Earning ☐ Ownership

19________ ☐ Lab Experience ☐ Wage Earning ☐ Ownership

19________ ☐ Lab Experience ☐ Wage Earning ☐ Ownership

19________ ☐ Lab Experience ☐ Wage Earning ☐ Ownership

19________ ☐ Lab Experience ☐ Wage Earning ☐ Ownership

ASSIGNMENT SHEET 3

ORIENTATION TO FFA RECORD KEEPING

C1

Name ______________________________ Score __________

OBJECTIVE 7

Develop an agreement for a Supervised Agricultural Experience Program in production agriculture.

INSTRUCTIONS

All persons involved with your Supervised Agricultural Experience Program in production agriculture should accept responsibilities. A form on which these responsibilities can be recorded is provided in the FFA *Record Book*. All parties mentioned on the form should meet to discuss their various responsibilities.

Study the sample agreement. Complete the blank form that follows for your own production agriculture enterprise(s). After all parties involved and your instructor have approved, transfer the agreement to your FFA *Record Book*.

Reading Comprehension
- Gain factual information
- React to written material

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

General Relating
- Identify personal values/attitudes

Job Search/Selection
- Develop personal career path

AGREEMENT

OWNERSHIP SAE PROGRAMS ,
(SAMPLE)

This agreement is entered into this ______ day of ______________ 19____ for a period of one year by and between ______________________________ and ______________________________ and covers the student's enterprises in ownership.

This agreement contains statements concerning responsibility for providing equipment, land, buildings, capital, management, feed, vet supplies, seed, fuel, fertilizer, transportation, etc.

Student agrees to provide: (Specify details by enterprises)

Swine: Capital for purchases by borrowing at the local bank as needed; labor, management, feed, vet supplies, equipment

Beef: Capital for purchases by borrowing, as needed, at Farmers Home Administration (FmHA) or other lending agency; feed, management, vet supplies, labor for parents' beef enterprises as needed

Wheat: Labor, seed, chemicals, fertilizer, and labor as needed for parents' crop enterprises

Land: Capital for taxes, improvements

Equipment: Capital and labor for repairs and maintenance and new purchases

Student is to receive: (Specify details by enterprises)

Swine: Income, risk; land and transportation from parents in exchange for labor

Beef: Income, risk; pasture, as needed; buildings; equipment use; transportation from parents in exchange for labor in parents' beef enterprise

Wheat: Yield of the crop; use of parents' equipment, fuel, and transportation, as needed, in exchange for labor in crop enterprises

Land: Yield from the land

Equipment: Use of own equipment, and declining value due to depreciation

(continued on next page)

Parent or "Other Party" agrees to provide: (Specify details by enterprises)

Swine: Land and transportation in exchange for student's labor

Beef: Pasture, as needed; buildings, equipment use, and transportation in exchange for student's labor in parents' beef enterprise

Wheat: Equipment, fuel, and transportation, as needed for student's wheat enterprise, in exchange for labor in parents' crop enterprises

Land: ______

Equipment: ______

Parent or "Other Party" is to receive: (Specify details by enterprises)

Swine: Student's labor in farm enterprises

Beef: Student's labor, as needed, in beef enterprise

Wheat: Student's labor in crop enterprise

Land: ______

Equipment: ______

Responsibility of Agricultural Education teacher:

______

Signatures: ______ (Student)

______ (Parent or "Other Party")

______ (Agricultural Education Teacher)

AGREEMENT

OWNERSHIP SAE PROGRAMS

This agreement is entered into this ______ day of ______________ 19_____ for a period of one year by and between ______________________________ and ______________________________________ and covers the student's enterprises in ownership.

This agreement contains statements concerning responsibility for providing equipment, land, buildings, capital, management, feed, vet supplies, seed, fuel, fertilizer, transportation, etc.

Student agrees to provide: (Specify details by enterprises)

____

____

____

____

____

____

____

____

____

____

Student is to receive: (Specify details by enterprises)

____

____

____

____

____

____

____

____

____

(continued on next page)

Parent or "Other Party" agrees to provide: (Specify details by enterprises)

Parent or "Other Party" is to receive: (Specify details by enterprises)

Responsibility of Agricultural Education teacher:

Signatures: ______________________ (Student)

______________________ (Parent or "Other Party")

______________________ (Agricultural Education Teacher)

OBJECTIVE SHEET

INVENTORIES AND NET WORTH

C2

INTRODUCTION

Record keeping is an important part of business. Knowing what is in the inventory allows for planning and decision making. It helps avoid an unnecessary duplication of equipment or stock by showing the overall outlook. Inventories and net worth statements are required by most lending institutions when requesting credit or loans.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS	
PREREADING:	Read *Developing a Net Worth Statement* by Mike L. Hardin, Ross O. Love, and Harry P. Mapp, Jr., OSU Fact Sheet No. 752.
WRITING:	Write a one to two page essay explaining the purpose of a net worth statement. Include short definitions of the asset, liabilities, and equity terms.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. State reasons for keeping inventory records.
2. List dates to make beginning inventories.
3. Select from a list items to be included in the Supervised Agricultural Experience Program inventory.
4. Match inventory methods of valuation to their correct assets.
5. Match assets to their correct inventory units and valuations.
6. List possible record keeping enterprises.
7. Match types of breeding stock to their correct rules for listing them on inventory.
8. Arrange in order the steps for completing a net worth statement.
9. Classify assets according to enterprise columns. (Assignment Sheet 1)
10. Prepare a sample beginning inventory. (Assignment Sheet 2)
11. Prepare a personal beginning inventory. (Assignment Sheet 3)
12. Prepare a sample net worth statement. (Assignment Sheet 4)
13. Prepare a personal net worth statement. (Assignment Sheet 5)

INVENTORIES AND NET WORTH

OBJECTIVE 1

Required Activities/ Resources
- Discussion

State reasons for keeping inventory records.

? Discuss the reasons why record keeping is essential.

- To obtain a true picture of the SAE Program
- To show growth or decline of the SAE Program
- To provide a good management tool for decision making
- To obtain credit or loans
- To place values on assets
- To complete estate planning and settlement

OBJECTIVE 2

Optional Activities/ Resources in Instructor's Guide

List dates to make beginning inventories.

WORDS YOU SHOULD KNOW

beginning inventory	itemized list of assets and liabilities and their values pertaining to the Supervised Agricultural Experience (SAE) Program listed according to the enterprises at the start of the record keeping period
ending inventory	itemized list of assets and liabilities and their values pertaining to the SAE Program listed according to enterprises at the close of the record keeping period

- first beginning inventory – soon after entering agricultural education program; usually September 1

  ☑ **NOTE:** An inventory will be made at this time only by students who are enrolling for the first time, and who already have assets that will be used in their SAE Programs.

- remaining beginning inventories – January 1 of each year

  ☑ **NOTE:** Inventory is made as if it were done all on the same day. It must match exactly the information in the previous ending inventory, and it must never be changed.

OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

Select from a list items to be included in the Supervised Agricultural Experience Program inventory.

☑ **NOTE:** List items owned personally or in partnership. If owned in partnership explain what percentage you own, and record only the value of your share.

- All livestock held primarily for sale
- All livestock held for draft, breeding, dairy, or sperming purposes, whether raised or purchased
- Growing or standing crops
- Equipment owned and used in the SAE Program

  ☑ **NOTE:** Do not include items of transportation, such as pickups, cars, or motorcycles, unless more than half of the usage is directly related in the SAE Program.

- Feed, seed, fuel, fertilizers, and supplies on hand
- Any nontraditional farm SAE Program items
- Land legally owned or being purchased by the student

  ☑ **NOTE:** Do not inventory items or animals used for personal pleasure only. If it is likely that they will not produce income, do not inventory them.

OBJECTIVE 4

Required Activities/
Resources
– Reading

Optional Activities/
Resources in
Instructor's Guide

Match inventory methods of valuation to their correct assets.

📖 You will read newspaper market reports.

WORDS YOU SHOULD KNOW	
asset	item or resource controlled by the business

- purchase cost – the price at which an item was purchased

  ☑ **NOTE:** Use the purchase price method for feed, fuel, fertilizer, seed, consumable supplies on hand, and equipment purchased for less than $100.

- market value – the value of an item at the market place, less transportation and marketing charges

  ☑ **NOTE:** Use the market value method for raised market livestock; stored farm-produced crops.

- production cost – the value of an item based on expense of production

  ☑ **NOTE:** Production cost is the total cost that had already been invested up to the inventory date. Use the production cost method for growing crops and growing horticulture plants not ready for market and purchased animals for resale.

- cost minus depreciation – the value of an item calculated by subtracting depreciation from the cost of the item

  ☑ **NOTE:** Use the cost minus depreciation method for buildings, fences, machinery, and equipment that originally cost $100 or more.

OBJECTIVE 5

Optional Activities/
Resources in
Instructor's Guide

Match assets to their correct inventory units and valuations.

WORDS YOU SHOULD KNOW	
quantity	number of items or units
unit	any fixed quantity, amount, distance, or measure used as a standard for counting or measuring items or assets EXAMPLES: livestock counted by head, hay measured by tons or counted by bales, land measured by acres, harvested crops measured by bushels
unit price	monetary value assigned to individual units; used to figure overall value EXAMPLES: \$3.52/bu (bushel), \$165.00/ton, \$71.52/cwt (hundredweight)
valuation	setting a value or a unit price for an item or good

- livestock – price per pound or per hundredweight

  ☑ **NOTE:** For like sizes and classifications of animals, the value of an individual animal is usually figured and then multiplied by the number of head.

  EXAMPLE: Twenty market hogs averaging 200 pounds each, with a market value of \$0.35 per pound

200 lb hog	\$70.00/head
x .35/lb	x 20 head
\$70.00/head	\$1400.00 total value of 20 hogs

- stored crops
  - small grains – price per bushel
  - peanuts, pecans, soybeans – price per ton or price per pound

  - hay – price per ton or price per bale

    EXAMPLE: Twenty-five round bales of grass at $22.00 per bale.

    $22 per bale
    x 25 bales
    $550.00

  - cotton – price per pound

    ☑ **NOTE:** The price per pound valuation is for lint or ginned cotton, which is baled and stored in 500–pound bales; unginned cotton must be estimated.

- growing assets

  - growing crops – production costs invested per acre

  - growing horticultural plants not ready for market – production costs invested per flat, pot, or individual plant

  - purchased animals for resale – production costs invested per individual animal

    ☑ **NOTE:** Items to be considered in figuring production costs invested would include applicable purchase prices, rates for tillage operations, seed, fertilizer, potting soil, flats, pots, utilities, feed ,interest, veterinarian supplies or fees, hired labor, hired transportation, and cash rent.

- other assets

  - feed – price per hundredweight or price per ton

  - fuel – price per gallon

  - fertilizer – price per ton or price per bag

  - equipment and machinery – price per item

    ☑ **NOTE:** Similar units or items can be grouped. Calculate the price of one unit and multiply by the number of total units to make one entry in the inventory.

    EXAMPLE: Ten steers of similar size and kind, averaging 400 pounds each, and worth $0.80/pound, could be inventoried at

    10 steers avg. 400 lb. x $0.80/lb. = $3200.00

  - land – price per acre

OBJECTIVE 6

Optional Activities/
Resources in
Instructor's Guide

List possible record keeping enterprises.

☑ **NOTE:** Inventory all poultry and livestock, and all feed and supplies intended or used for poultry or livestock under the appropriate enterprise headings. Inventory equipment intended or used for poultry or livestock under the appropriate enterprise heading if it is to be used only for that enterprise.

- beef
- swine
- sheep
- poultry
- dairy cattle
- dairy goats
- horses
- crops
- fruit or nut production

  ☑ **NOTE:** For the crop, fruit, nut, or vegetable production enterprises, specify the enterprise column by the crop name.

- vegetable production
- nursery production
- forestry production
- fish and/or wildlife
- land

  ☑ **NOTE:** Inventory only the land owned by and deeded to the student. Inventory permanent improvements to the land at the cost of the improvement. Inventory permanent buildings and fences placed on the land under the land enterprise column, but set up on a depreciation schedule.

  EXAMPLES: Conservation practices, clearing, sodding, leveling

- equipment

  ☑ **NOTE:** List under the equipment column all equipment items used by two or more enterprises.

  EXAMPLES: Hand tools, equipment, machinery

- agribusiness

  ☑ **NOTE:** Inventory any assets or items that are not under another enterprise column. Inventory special items on hand that would be needed for a job placement type of SAE Program.

  EXAMPLE: Student-furnished mechanic's tools

OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

Match types of breeding stock to their correct rules for listing them on inventory.

☑ **NOTE:** Animals are referred to as in production or mature at the time the female animals produce offspring, or the male animals are used for breeding purposes.

- purchased as immature – On the first inventory, value the animal at purchase price plus all production costs incurred up to the first inventory date. If not mature at the next inventory date, value the animal at the previous inventory value plus production costs incurred for that year.

  ☑ **NOTE:** Once the animal is mature or in production, the inventory value remains constant until the animal is disposed of. If desired, straight-line depreciation may be taken each year after the animal has reached mature value.

- purchased as mature – Always inventory the animal at the purchase price.

  ☑ **NOTE:** Straight-line depreciation may be taken each year thereafter if desired.

- raised breeding stock – On the first inventory, value the animal at the conservative market value plus all production costs incurred up to the first inventory date. If not mature at the next inventory date, value the animal at the previous inventory value plus production costs incurred for that year.

  ☑ **NOTE:** Once the animal is mature or in production, the inventory value remains constant until the animal is disposed of. If desired, straight-line depreciation may be taken each year after the animal has reached mature value.

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

Arrange in order the steps for completing a net worth statement.

☑ **NOTE:** All entries should be made as if it were the same date as the inventory.

WORDS YOU SHOULD KNOW	
liabilities	financial claims against a business; the amount of money owed on a net worth statement
lien	claim which gives a creditor the right to have a debt satisfied from real or personal property belonging to the debtor if the debtor defaults on regular payment of the debt
net worth	difference between total assets and total liabilities; also known as owner's equity
net worth statement	financial statement that lists all assets, value of assets, and liabilities of the business at a particular point in time, usually at the end of an accounting period; also may be called a balance sheet, financial statement, or statement of financial condition

1. Transfer the total from inventory Total Value column to the line provided. (Section A, Line 1)
2. Transfer the total from the Accounts Receivable form in the FFA *Record Book* to the line provided. (Section A, Line 2)
3. Enter the cash on hand as of the date the net worth statement is made. (Section A, Line 3)
4. Enter the amount of your personal checking account balance as of the date the net worth statement is made. (Section A, Line 4)
5. Enter the amount of your personal savings account balance as of the date the net worth statement is made. (Section A, Line 5)

6. Enter other personal assets and their values. (Section A, Line 6)

   ☑ **NOTE:** These items would include personal and recreational items that do not affect the SAE program.

7. Total the value of all assets.

8. Enter the total amount of all unpaid SAE Program bills. (Section B, Line 1)

   ☑ **NOTE:** Include only those bills that pertain to the SAE Program.

   EXAMPLE: Feed bills, veterinarian supplies and fees

9. Transfer the total from the Accounts Payable form in the FFA *Record Book* to the line provided. (Section B, Line 2)

   ☑ **NOTE:** These totals refer to notes and mortgages held by creditors including lending institutions or individuals.

10. List other liabilities in the SAE Program and their descriptions. (Section B, Line 3)

    ☑ **NOTE:** These would include all personal debts.

11. Total all liabilities.

12. Compute the net worth by subtracting B from A under the beginning or ending column.

    ☑ **NOTE:** If B is larger than A, the net worth will be a negative number.

OBJECTIVE 9 **Complete Assignment Sheet 1.**

OBJECTIVE 10 **Complete Assignment Sheet 2.**

OBJECTIVE 11 **Complete Assignment Sheet 3.**

OBJECTIVE 12 **Complete Assignment Sheet 4.**

OBJECTIVE 13 **Complete Assignment Sheet 5.**

ASSIGNMENT SHEET 1

INVENTORIES AND NET WORTH

C2

Name ______________________________ Score __________

OBJECTIVE 9

Classify assets according to enterprise columns.

INTRODUCTION

In order to set up and start the record keeping system properly, it is important to be able to classify assets under the proper enterprise columns. Such classification ensures that all assets are in the proper place in the beginning inventory.

INSTRUCTIONS

Functional Reading
- Follow written instructions

Cognitive Activities
- Apply new technology

Classify the following assets under the proper enterprise columns. Place the number of the asset under the enterprise name. You may refer to the list in the Information Sheet.

1. Three Angus cow/calf pairs; calves average two months old
2. One breeding-age Duroc boar
3. Two hundred feeder pullets
4. Two wether show lambs
5. Five hundred small square bales of prairie hay, purchased to be fed to beef breeding stock
6. Three thousand bushels of wheat, stored in elevator, to be sold
7. One portable five-stall farrowing house; original cost $800
8. One eleven-month-old Hereford show heifer
9. Two cross bred show barrows
10. Thirty home-produced mixed barrows and gilts being fed for market and averaging 90 pounds each
11. One pig ear notched, original cost $6
12. Thirty mixed beef steers that you are running on your wheat pasture on cash-rented land; all cattle average 450 pounds
13. Two hundred and fifty mixed, caged laying hens and pullets

14. One beef show halter, original cost $25

15. Ten portable steel panels used for a stud pen; original cost $30 each

16. Forty acres of good wheat pasture that you intend to pasture until March 15, and later harvest as a cash crop

17. One $300 spray rig, used to spray your fruit trees and do custom spraying for some neighbors

18. Fifty dwarf Burford holly shrubs, of about equal size, which will probably be sold in the next two months; you have them in your outdoor plant bed

19. One hundred young growing trees that you plan to sell next Christmas

20. Two crossbred steers to be fed out for show steers

21. Three producing Hampshire ewes

22. Ten fall-born wether lambs being fed for market

23. Twenty-five culled laying hens being fattened for market

24. Five producing dairy does

25. One four-year-old quarter horse stud that you use to breed your three mares and approximately ten outside mares a year

26. Eight acres of cropland that you have made a down payment on; you are crop farming the land, getting some pasture benefits from it, and running stockers on it each year

27. One $350 rotary tiller that you use only in your commercial vegetable production operation

Beef

____

____

Swine

____

____

Sheep

____

____

Poultry

____

____

Dairy Cattle

____

____

Dairy goats

____

____

Horses

____

____

Crops

____

____

Fruit or nut production

____

____

Vegetable production

____

____

Nursery production

____

____

Forestry production

____

____

Fish and/or wildlife

____

____

Land

____

____

Equipment	Agribusiness
____________________	____________________
____________________	____________________

ASSIGNMENT SHEET 2

INVENTORIES AND NET WORTH

C2

Name ______________________________ Score __________

OBJECTIVE 10

Prepare a sample beginning inventory.

INTRODUCTION

Preparing a sample beginning inventory is good practice for the preparation of your actual beginning inventory in your FFA *Record Book*. Certain steps must be followed to obtain an accurate record. All entries should be made as of a single date in time.

1. Record the enterprise names in boxes 1 through 6 on the Beginning Inventory form.
2. Record the items to be inventoried in the "Item or Description" column.
3. Record the value of the inventoried item in the "Total Value" column.
4. Record the value of the listed item in the corresponding enterprise column.
5. Total all columns and write the amount at the bottom of each column.
6. Verify that the total amount of the enterprise columns 1 through 6 equals the total of the amount of the "Total Value" column.

INSTRUCTIONS

Functional Reading
- Follow written instructions

Functional Writing
- Complete forms and records

Study the example provided. Then, using the information below, complete the beginning inventory form.

Identify the column headings needed. Label the enterprise columns needed. Post inventory items with their values. Post the item value under the column titled Total Value. Then post under the appropriate enterprise column, using the same horizontal line for both values. Total all columns at the bottom.

- Two crossbred show barrows that you bought last spring for $65 each. Your other costs invested up to this point are $30 each for the two pigs.
- Four hundred pounds of hog feed purchased for $13/cwt.

Operation and Calculation
- Calculate with decimals

Functional Math
- Use calculator for computation

Cognitive Activities
- Transfer knowledge/training to new situations

- Eight hundred bushels of wheat stored from last spring's harvest. Current market value is $3.50/bu.
- Ten portable panels that originally cost $400. Depreciated value at the time of this inventory is $300. These panels are sometimes used with both the beef and swine enterprises.
- One eight-month-old steer you have raised and plan to sell as a stocker steer. The steer weighs 625 pounds and the current market value is $.81/lb.
- Sixty bales of hay that you purchased for $3.00/bale to be fed to your cow this winter.
- One 2½-year-old Hereford cow that you bought last winter. Inventory at $500 purchase cost, plus production costs, up to inventory time, of $90.
- Forty acres of cropland deeded to you and given to you by your grandfather last year. The appraised value of the land at inventory time is $700/acre.

BEGINNING INVENTORY

January 1, 19______

Item or Description	Total Value		Value to the Enterprise											
			1 SWINE		2 BEEF		3 WHEAT		4 LAND		5 EQUIP.		6	
2 reg. Hamp Gilts, 175 lb/ea.														
$92 invested in each	184	00	184	00										
1 Simmental cow (purchased														
as cow/calf pair)	600	00			600	00								
1 Simmental calf (4 months														
old and will be a show														
steer) Production														
costs invested =	246	00			246	00								
20 acres of farm land to														
plant wheat crop on	14,000	00							14,000	00				
1 portable A-frame hog														
house (purchased July 1														
for $500) See														
depreciation schedule	485	00	485	00										
200# of hog feed @ $13/cwt	26	00	26	00										
Swine show equipment	12	00	12	00										
Beef show equipment														
(halter, brush, comb)	42	00			42	00								
Beginning Inventory Totals	15,595	00	707	00	888	00			14,000	00				

BEGINNING INVENTORY

January 1, 19______

Item or Description	Total Value		Value to the Enterprise											
			1		2		3		4		5		6	
Beginning Inventory Totals														

ASSIGNMENT SHEET 3

INVENTORIES AND NET WORTH

C2

Name ______________________________ Score __________

OBJECTIVE 11

Prepare a personal beginning inventory.

INTRODUCTION

It is important to prepare an accurate beginning inventory in order to get your record keeping system off to a good start. To complete a personal beginning inventory for your SAE Program, it is necessary to list your inventory items, identify your enterprise column names, and prepare your beginning inventory. If you are a first-year agricultural education student, prepare your first beginning inventory, use September 1 as your beginning inventory date.

INSTRUCTIONS

Functional Reading
- Follow written instructions

Functional Writing
- Complete forms and records

Operation and Calculation
- Calculate with decimals

Functional Math
- Use calculator for computation

Cognitive Activities
- Transfer knowledge/training to new situations

Part 1

Make a detailed list of inventory items for your SAE Program in the space provided.

Part 2

Prepare your beginning inventory on the form provided. After completing the form and getting your instructor's approval, transfer this information to your FFA *Record Book*. Remember to make all entries in pencil.

BEGINNING INVENTORY

January 1, 19______

Item or Description	Total Value	Value to the Enterprise					
		1	2	3	4	5	6
Beginning Inventory Totals							

ASSIGNMENT SHEET 4

INVENTORIES AND NET WORTH

C2

Name ______________________________ Score __________

OBJECTIVE 12

Prepare a sample net worth statement.

INSTRUCTIONS

Study the sample statement. Use the information provided to complete a sample net worth statement.

- Beginning inventory value – $3,104
- Accounts receivable – none
- Cash on hand – $7.84
- Checking account balance – $94.33 at First State Bank
- Savings account balance – $311.14 at First State Bank
- Other assets – An $85 rifle and a $70 ten-speed bicycle
- Unpaid bill for services – $62 at B & K Veterinarian Clinic
- Account payable – $364 from buying two sows
- No other liabilities

Functional Reading
- Follow written instructions

Functional Writing
- Complete forms and records

Operation and Calculation
- Calculate with decimals

Functional Math
- Use calculator for computation

Cognitive Activities
- Transfer knowledge/training to new situations

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This balance sheet is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

A. Student's Assets	**Beginning**	**Ending**
	Date 9-1-94	Date
1. Total inventory value (from pages 6 and 7)	$ 15,595.00	$
2. Accounts receivable (from page 32)	$ —	$
3. Cash money on hand	$ 12.17	$
4. Checking account 1st National Bank	$ 111.06	$
5. Savings account Liberty Fed. Sav. + Loan	$ 2,134.18	$
6. Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	$	$
12 ga. shotgun	$ 160.00	$
1-year-old motorcycle	$ 700.00	$
	$	$
	$	$
	$	$
A. TOTAL ASSETS	$ 18,712.41	$

B. Student's Liabilities		
1. Unpaid bills Central Feed Store	$ 47.51	$
2. Accounts payable (notes and mortgages) from page 32		
	$	$
3. Other liabilities (specify)	$	$
	$	$
	$	$
B. TOTAL LIABILITIES	$ 47.51	$

NET WORTH (A minus B) Beginning $ 18,664.90 NET WORTH (A minus B) Ending $

(NOTE: Beginning net worth values in this book must be the same as the ending net worth values of the previous book; ending values of this book must be the same as the beginning net worth values of the next book.)

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This balance sheet is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

A. Student's Assets	**Beginning**	**Ending**
	Date ______	Date ______
1. Total inventory value (from pages 6 and 7)	$ ______	$ ______
2. Accounts receivable (from page 32)	$ ______	$ ______
3. Cash money on hand	$ ______	$ ______
4. Checking account	$ ______	$ ______
5. Savings account	$ ______	$ ______
6. Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	$ ______	$ ______
____________	$ ______	$ ______
____________	$ ______	$ ______
____________	$ ______	$ ______
____________	$ ______	$ ______
____________	$ ______	$ ______
A. TOTAL ASSETS	$ ______	$ ______
B. Student's Liabilities		
1. Unpaid bills	$ ______	$ ______
2. Accounts payable (notes and mortgages) from page 32		
____________	$ ______	$ ______
3. Other liabilities (specify) ______	$ ______	$ ______
____________	$ ______	$ ______
____________	$ ______	$ ______
B. TOTAL LIABILITIES	$ ______	$ ______

NET WORTH (A minus B) Beginning $______ NET WORTH (A minus B) Ending $______

(NOTE: Beginning net worth values in this book must be the same as the ending net worth values of the previous book; ending values of this book must be the same as the beginning net worth values of the next book.)

ASSIGNMENT SHEET 5 — INVENTORIES AND NET WORTH

Name ______________________________ Score __________

OBJECTIVE 13 **Prepare a personal net worth statement.**

INTRODUCTION

Your personal net worth statement will be used as a tool to help you justify borrowing money. Therefore, it is very important to complete the net worth statement neatly and accurately.

INSTRUCTIONS

Using your personal records and those for your SAE Program, prepare the personal net worth statement on the next page. After completing the form and getting teacher approval, transfer this information to your FFA *Record Book*. Remember to make all entries in the FFA *Record Book* in pencil. If you are a first-year agricultural education student preparing your first net worth statement, use September 1 as your beginning date.

Functional Reading
- Follow written instructions

Functional Writing
- Complete forms and records

Operation and Calculation
- Calculate with decimals

Functional Math
- Use calculator for computation

Cognitive Activities
- Transfer knowledge/training to new situations

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This balance sheet is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

A. **Student's Assets**	**Beginning**	**Ending**
	Date ______	Date ______
1. Total inventory value (from pages 6 and 7)	$ ________	$ ________
2. Accounts receivable (from page 32)	$ ________	$ ________
3. Cash money on hand	$ ________	$ ________
4. Checking account	$ ________	$ ________
5. Savings account	$ ________	$ ________
6. Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	$ ________	$ ________
________________________________	$ ________	$ ________
________________________________	$ ________	$ ________
________________________________	$ ________	$ ________
________________________________	$ ________	$ ________
________________________________	$ ________	$ ________
A. TOTAL ASSETS	$ ________	$ ________
B **Student's Liabilities**		
1. Unpaid bills	$ ________	$ ________
2. Accounts payable (notes and mortgages) from page 32		
________________________________	$ ________	$ ________
3. Other liabilities (specify) ____________________	$ ________	$ ________
________________________________	$ ________	$ ________
________________________________	$ ________	$ ________
B. TOTAL LIABILITIES	$ ________	$ ________

NET WORTH (A minus B) Beginning $________ NET WORTH (A minus B) Ending $________

(NOTE: Beginning net worth values in this book must be the same as the ending net worth values of the previous book; ending values of this book must be the same as the beginning net worth values of the next book.)

OBJECTIVE SHEET

RECORD KEEPING TRANSACTIONS

C3

INTRODUCTION

Proper record keeping is vital to a business because it gives an accurate picture of the financial situation. Accuracy in the posting of the individual records is also vital. Regularly scheduled updates or records maintenance is vitally important in order to keep records current. Entering inaccurate amounts when posting or entering the amounts to improper accounts causes the records to be out of balance. This, in turn, gives a poor picture of the overall business standing.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS	
PREREADING:	Read *Oklahoma Farm and Ranch Custom Rates, 1992-93* by Raleigh Jobes and Darrel D. Kletke, OSU Fact Sheet No. 205.
WRITING:	Use the fact sheet to figure and compare the rates for custom work on a 360 acre field in each of the three regions listed in the report. Compute figures for the following work: shallow disc, surface chisel, field cultivating, anhydrous ammonia application, ground weed spraying, small grain drilling, hay mowing, hay raking, hay swathing, hay hauling, small grain harvesting, corn harvesting, livestock spraying, livestock branding, brushhogging, and tractor rental.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Select from a list correct times to post transactions.
2. Select from a list reasons for exchange labor transactions.
3. Arrange in order the steps for posting an exchange labor transaction.
4. Select from a list reasons for enterprise transfers.
5. Arrange in order the steps for posting an enterprise transfer.
6. Select from a list rules for keeping records of land.
7. State rules for recording in the FFA *Record Book* gifts to the Supervised Agricultural Experience Program.
8. Select from a list rules for keeping records of equipment use.
9. Post FFA *Record Book* transactions. (Assignment Sheet 1)
10. Post enterprise transfer transactions. (Assignment Sheet 2)

INFORMATION SHEET

RECORD KEEPING TRANSACTIONS

C3

OBJECTIVE 1

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Select from a list correct times to post transactions.

Start a discussion by asking the question "Why do records need to be posted at the proper time?"

WORDS YOU SHOULD KNOW	
accounts payable	money that a business or individual owes for goods or services purchased
accounts receivable	money to be collected from businesses or individuals to whom products or services were sold
enterprise transfer	change of assets from one enterprise to another
expense	cost or cash outlay to a particular enterprise
expense transfer	change of assets from one enterprise to another ☑ **NOTE:** Often it is necessary to transfer assets from one account to another. The purpose of such a transfer is to show an increase to an enterprise for items transferred that may not actually produce a cash value.
income	revenue or cash inflow to a particular enterprise
post	to make an entry in the FFA *Record Book*

- each time a single expense occurs
- each time a sale or income occurs
- when an enterprise is transferred
- when a phase of expenses occurs for a particular enterprise

  ☑ **NOTE:** Expenses would be posted to a particular crop enterprise when that phase of the operation is complete.

  EXAMPLES: Plowing, purchasing seed, purchasing fertilizer, planting, topdressing, spraying, harvesting

  If tractors or equipment belonging to parents is used, the fair custom-rate amount should be posted to expenses for the crop enterprise and an equal amount posted to the Agribusiness column on the Sales and Income page.

- weekly or monthly when exchange labor transaction expenses and income occur
- when interest payments that have not previously been charged as expenses are made
- when gifts are received and posted as an expense

  ☑ **NOTE:** An expense entry should be made reflecting the market value or appraised value. Also an entry must be made in the Gifts and Income Other than Earnings section.

OBJECTIVE 2

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Select from a list reasons for exchange labor transactions.

Discuss the importance of exchange labor transactions.

- Goods or services used in student's enterprises are difficult to separate from those used in parents' or other party's enterprises.
- Instead of hiring labor, an exchange labor agreement is made between student and parents or other parties.
- A student can provide time for labor, but is not able to purchase goods, services, or equipment use.
- Goods, services, or equipment use is not available for purchase or for hire.

OBJECTIVE 3

Arrange in order the steps for posting an exchange labor transaction.

Required Activities/
Resources
- Transparency Master

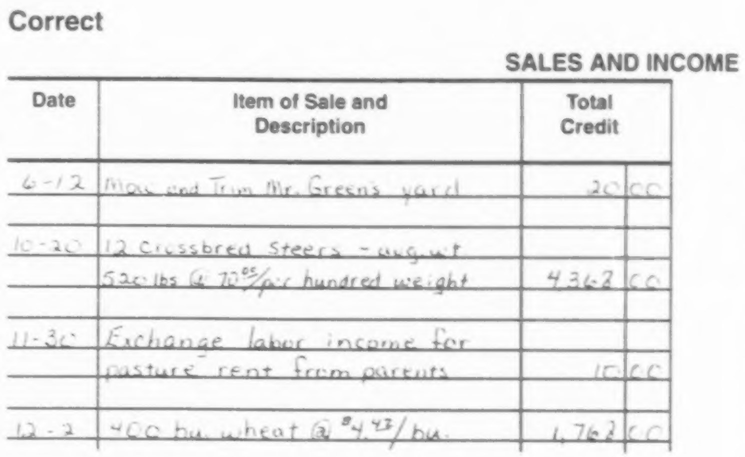
Optional Activities/
Resources in
Instructor's Guide

You will see a transparency showing correct and incorrect postings.

☑ **NOTE:** The value and amount of the labor, and the value and amount of the units being exchanged should be determined before posting the transaction. The period of time involved should also be predetermined. Be sure to use realistic and customary values.

1. Compute the dollar value of products or services received for the time period involved.
2. Charge the total amount to the appropriate enterprise on the Expenses page.
3. Credit the total amount to the Agribusiness enterprise column on the Sales and Income page.

FIGURE 1



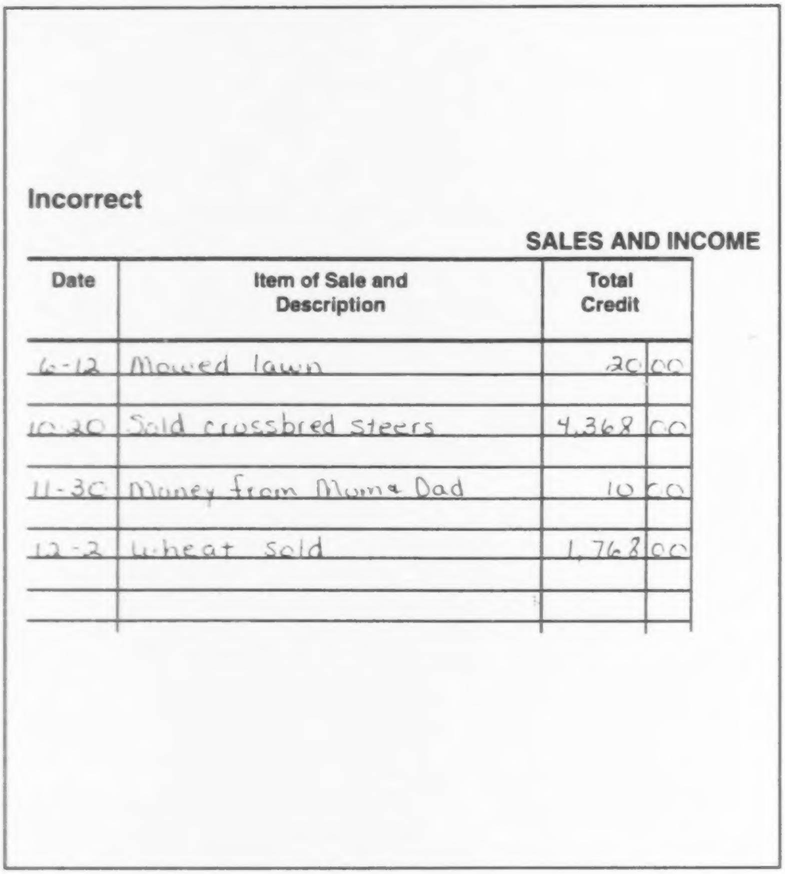
Correct

SALES AND INCOME

Date	Item of Sale and Description	Total Credit	
6-12	Mow and Trim Mr. Green's yard	20	00
10-20	12 Crossbred Steers - avg. wt		
	520 lbs @ 70^{05}/per hundred weight	4,362	00
11-30	Exchange labor income for		
	pasture rent from parents	10	00
12-2	400 bu. wheat @ $^{\$}4.^{43}$/bu.	1,762	00

BEST COPY AVAILABLE

FIGURE 2



Incorrect

SALES AND INCOME

Date	Item of Sale and Description	Total Credit	
6-12	Mowed lawn	20	00
10-20	Sold crossbred steers	4,368	00
11-30	Money from Mom & Dad	10	00
12-2	Wheat sold	1,768	00

OBJECTIVE 4

Optional Activities/ Resources in Instructor's Guide

Select from a list reasons for enterprise transfers.

- showing proper credit to an enterprise that otherwise may not have an actual sale or income

  EXAMPLE: You decide to feed some wheat or another harvested crop that you have grown and have in storage to your swine enterprise instead of selling it for a cash sale. You determine the market value of the crop and show an income to that crop enterprise for the amount to be fed. You show an equal value as a feed expense to the swine enterprise.

- analyzing enterprise and making decisions
- showing records of individual enterprises

OBJECTIVE 5

Optional Activities/
Resources in
Instructor's Guide

Arrange in order the steps for posting an enterprise transfer.

1. Determine the enterprise that you want to transfer from.
2. Determine the enterprise that you want to transfer to.
3. Determine the description and value.
4. Credit the amount to the appropriate enterprise column on the Sales and Income page.
5. Charge the amount to the appropriate enterprise column on the Expenses page.

☑ **NOTE:** The recorded values of the credits and charges must be the same.

OBJECTIVE 6

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Select from a list rules for keeping records of land.

? Discuss the question "If my land is overvalued, doesn't that make my operation look better?"

- land owned

  ☑ **NOTE:** Land owned is defined as "land which is deeded or under contract for deed to the student."

  ☐ Inventory at fair market or appraised value land owned prior to entering the agricultural education program.

  ☐ Enter the land obtained after the first inventory on the Expenses page under the land column at the actual cost or appraised value.

  ☐ Rent the land to the enterprise using it.

  EXAMPLE: If it is cropland, show an income in the land column at a fair rent price, and charge the same amount as an expense to the crop. If it is pastureland, show an income in the land column at a fair pasture rent price, and show a pasture rent expense to the livestock enterprise using the land.

  ☐ Always keep the inventory value the same.

- land rented for cash
  - Never put it on the inventory.
  - Show as a cash expense to the enterprise using the land.

    ☑ **NOTE:** If the land is being used by more than one enterprise, or only for part of the year, then the expense should be prorated.
  - Never have a land enterprise column for land you rent from someone.
- crop-share rented land
  - Never put it on the inventory.
  - Never have a land enterprise column for crop-share rented land.
  - Show only the student's share of expenses, and post it in the crop enterprise column on the Expenses page.
  - Show only the student's share of income, and post it in the crop enterprise column on the Sales and Income page.

OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

State rules for recording in the FFA *Record Book* gifts to the Supervised Agricultural Experience Program.

- Record the gift as an expense at fair-market value or appraised value.

  ☑ **NOTE:** The expense of the asset will be offset by the fact that the item will show up on the next inventory.
- Record the same information in the Gifts and Income Other than Earnings Section.
- Record the assets that have a title, deed, or registration paper in the student's name.

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

Select from a list rules for keeping records of equipment use.

- Record the depreciable machinery and equipment under a separate column if the item might be used by more than one enterprise.

- Rent equipment at a fair custom rate to the enterprise using it.

  ☑ **NOTE:** Show an income to the equipment enterprise, and an expense to the enterprise using the equipment.

  EXAMPLE: If your tractor is being used to work your wheat ground, then show an income to the equipment enterprise at a fair custom rate, and an equal expense to the wheat enterprise.

OBJECTIVE 9 **Complete Assignment Sheet 1.**

OBJECTIVE 10 **Complete Assignment Sheet 2.**

ASSIGNMENT SHEET 1

RECORD KEEPING TRANSACTIONS

C3

Name ______________________________ Score __________

OBJECTIVE 9

Post FFA *Record Book* transactions.

INTRODUCTION

Posting FFA *Record Book* transactions is a necessary part of regular FFA *Record Book* maintenance. Because of fluctuating farm prices and values, some of the following values in the examples and situations may seem outdated.

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Functional Reading
- Interpret forms and records
- Follow written instructions

Operation and Calculation
- Calculate with decimals

Functional Math
- Use calculator for computation

Part 1

Study the sample situations and example postings of these situations, then post the next set of situations on the appropriate forms provided.

Sept. 12	Purchased 200 pounds of feed for the Hamp gilts at $13/cwt
Sept. 15	Purchased 30 bushels of seed wheat at $5.15/bu for wheat enterprise on owned farm land
Sept. 16	Paid State Fair entry fees on two gilts at $4/head
Sept. 20	Received payment from neighboring farmer for driving tractor ten hours at $4/hr
Sept. 22	Sold 400 bushels of wheat from last spring's wheat harvest at $3.52/bu
Sept. 22	Purchased 2 tons of fertilizer for wheat crop at $130/ton
Sept. 27	Posted exchange labor of $152.80 for discing and planting wheat, using parents' equipment, in exchange for thirty-eight hours of labor helping plant parents' wheat corp
Sept. 30	Posted exchange labor of $10 for September pasture rent for cow and calf in exchange for helping pour parents' cattle for grubs for two and one-half hours

SALES AND INCOME

Date	Item of Sale and Description	Total Credit		Credit to Enterprise											
				1 SWINE		2 BEEF		3 WHEAT		4 LAND		5 EQUIP.		6 Agribusiness	
9/20	10 Hours Tractor driving for Mr. Smith	40	00											40	00
9/22	400 bu. wheat @ $3.52/bu.	1,408	00					1,408	00						
9/27	Exchange labor for helping plant parents' wheat														
	+ equipment use (38 hrs.)	152	80											152	80
9/30	Exchange labor income for pasture rent	10	00											10	00

EXPENSES

Date	Item of Expense and Description	Total Credit		Charge to Enterprise											
				1 SWINE		2 BEEF		3 WHEAT		4 LAND		5 EQUIP.		6 Agribusiness	
9/12	200# hog feed	26	00	26	00										
9/15	30 bu. seed wheat @ $5.15/bu.	154	50					154	50						
9/16	Entry fee for gilts \ State Fair	8	00	8	00										
9/22	2 tons of 10-20-10 @ $130/T for wheat	260	00					260	00						
9/27	Exchange labor for discing and planting														
	wheat with Dad's equipment	152	80					152	80						
9/30	Exchange labor for														
	pasture rent	10	00			10	00								

Part 2

Oct. 7	Received $12 prize money on one of the Hamp gilts for placing first at the State Fair
Oct. 7	Received $2 prize money on the other Hamp gilt for placing seventh at the State Fair
Oct. 10	Purchased 200 pounds of hog feed at $13.10/cwt
Oct. 11	Paid breeding fee for two gilts at $50 each
Oct. 24	Sold one bred Hamp gilt at All-Breed Sale for $185
Oct. 27	Purchased one Hamp and one cross barrow for $75 each to show next spring
Oct. 31	Posted exchange labor of $10 for October pasture rent for cow and calf in exchange for helping with parents' cattle

EXHIBITION RECORD

Record all exhibits related to ownership program.

Date	Kind of Exhibit	Where Exhibited	Placings	Prize Won	
			Total		

At end of year, transfer total to Sales and Income page, and credit to proper enterprise(s).

SALES AND INCOME

Date	Item of Sale and Description	Total Credit		Credit to Enterprise											
				1		2		3		4		5		6	
	Balance Forwarded														

EXPENSES

Date	Item of Expense and Description	Total Credit		Charge to Enterprise											
				1		2		3		4		5		6	
	Totals Forwarded														

Name ______________________________ Score __________

OBJECTIVE 10 **Post enterprise transfer transactions.**

INSTRUCTIONS

Study the following example situation and transaction. After studying the example, post on the forms on the next page the enterprise transfer transactions for the situations given.

Reading Comprehension
- Gain factual information

Functional Reading
- Interpret forms and records
- Follow written instructions

Operation and Calculation
- Calculate with decimals

Functional Math
- Use calculator for computation

Part 1

Situation:

You have both a swine and a beef enterprise. You recently bought 1000 pounds of corn at $6/cwt. You have already recorded the corn as an expense to the swine enterprise, but now you have decided to feed 500 pounds of it to one of your beef calves. You need to show an expense for the corn to the beef enterprise and an equal amount of income to the swine enterprise in order to make this enterprise transfer. The transaction date is November 11.

SALES AND INCOME

Date	Item of Sale and Description	Total Credit	Credit to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6
	Balance Forwarded							
11/11	Transfer 500#							
	corn from swine							
	to beef @$6.00/cwt	30 00	30 00					

EXPENSES

Date	Item of Expense and Description	Total Credit	Charge to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6
	Totals Forwarded							
11/11	Transfer 500#							
	corn from swine							
	to beef @$6.00/cwt	30 00		30 00				

Part 2

Situation:

You have ten stocker steers averaging 400 pounds each, that you bought and put on your 20 acres of wheat pasture on November 1. You now need to record the enterprise transfer of wheat pasture as a sale to the wheat enterprise and an expense to the beef enterprise. The rate to use is $2/cwt/month. Using this rate, record the transaction for November on the forms below. The transaction date is November 30.

SALES AND INCOME

Date	Item of Sale and Description	Total Credit	Credit to Enterprise					
			1	2	3	4	5	6
	Balance Forwarded							

EXPENSES

Date	Item of Expense and Description	Total Credit	Charge to Enterprise					
			1	2	3	4	5	6
	Totals Forwarded							

OBJECTIVE SHEET

DEPRECIATION

C4

INTRODUCTION

In farming, as with any business, an accurate account of the financial standing is essential. Depreciating assets provides an opportunity to see the true worth of an asset for each year of its useful life. Depreciation allows an income tax deduction which releases cash for other uses.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Read *Depreciation and Investment Credit* by Mike L. Hardin, OSU Fact Sheet No. 748.
WRITING:	Write a one to two page essay summarizing this Fact Sheet. Include an explanation of the two depreciation methods listed and the recovery periods for assets you might need to depreciate. Choose one of the depreciation methods as your preference and explain why you chose it.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheet and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Select from a list reasons for depreciating an asset.
2. List the major causes of depreciation.
3. State how to calculate straight-line depreciation.
4. State the rule for determining which assets to set up on a depreciation schedule.
5. Distinguish between depreciable and nondepreciable assets.
6. Match assets to their suggested allowed years of depreciation.
7. Arrange in order the steps for handling depreciable assets in the FFA *Record Book*.
8. Complete a depreciation schedule. (Assignment Sheet)

INFORMATION SHEET

DEPRECIATION

C4

OBJECTIVE 1

Optional Activities/
Resources in
Instructor's Guide

Select from a list reasons for depreciating an asset.

WORDS YOU SHOULD KNOW	
depreciation	the amount of decline in value of an asset because of wear, weather, obsolescence, or inadequacy; a method of prorating the cost of a working asset over its productive life; a noncash expense

- Estimating the average yearly noncash expense

  ☑ **NOTE:** Such estimation provides an opportunity to see roughly what an item is worth each year of its useful life.

- Adjusting taxable income

  ☑ **NOTE:** Depreciation expenses allow a tax deduction, thereby releasing cash that can be used for other purposes. Refer to the *IRS Farmer's Tax* Guide for current income tax information.

- Estimating current value

  ☑ **NOTE:** If depreciation is overstated, it appears that there is less money invested in assets than there really would be if the assets were to be sold. As a result, the business shows a deflated net worth.

OBJECTIVE 2

Required Activities/
Resources
- Discussion

Optional Activities/
Resources in
Instructor's Guide

List the major causes of depreciation.

Start a discussion by asking "What causes assets to go down in value?"

- Wear and tear due to use
- Obsolescence due to new technology
- Deterioration due to elements of nature

OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

State how to calculate straight-line depreciation.

WORDS YOU SHOULD KNOW	
beginning of year balance	value of an asset at the start of a calendar year of record keeping based on the depreciation taken off in previous years
cost	purchase price of assets bought outright
depreciation this year	predetermined amount to be depreciated from an asset during the current calendar year of record keeping
ending of year balance	value of an asset at the close of a calendar year of record keeping; based on the total depreciation this year, plus total prior depreciation
prior depreciation	total value that has been taken in previous years
productive life	period of time which an asset is expected to be valuable to the business or in the production of income, usually expressed in number of years
adjustment	an election to expense an amount of the purchase price
working asset	asset that is productive over a period longer than one year becomes less valuable over time

- Subtract the adjustments from the cost and divide the difference by the productive life to find the amount depreciated each year.

☑ **NOTE:** Adjustments are an election that can be made and are used for tax purposes. Any adjustment should be deducted from the cost basis before figuring depreciation.

☑ **NOTE:** It is suggested that all depreciation done in the FFA *Record Book* be done with the straight-line method.

EXAMPLE: A 60-bushel self-feeder for swine was purchased on January 1, 1994 for $300. It has an estimated productive life of eight years, with an adjustment of $50.

$$\text{Annual Depreciation} = \frac{\text{Cost - Adjustments}}{\text{Number of Years' Productive Life}}$$

$$= \frac{300 - 50}{8}$$

$$= \$31.25$$

Year	Rate or Amount Each Year	Prior Depreciation	Beginning of Year Balance	Depreciation This Year	Ending of year Balance
1	31.25	--	300.00	31.25	268.75
2	31.25	31.25	268.75	31.25	237.50
3	31.25	62.50	237.850	31.25	206.25
4	31.25	93.75	206.25	31.25	175.00
5	31.25	125.00	175.00	31.25	143.75
6	31.25	156.25	143.75	31.25	112.50
7	31.25	187.50	112.50	31.25	81.25
8	31.25	218.75	81.25	31.25	50.00

☑ **NOTE:** If the feeder were purchased at midyear, the first year's depreciation would be 6/12 x $31.25, or $15.62. Each year thereafter the depreciation would be $31.25, until the ninth calendar year, when it would be 15.63, which is the balance to be depreciated.

OBJECTIVE 4

Optional Activities/
Resources in
Instructor's Guide

State the rule for determining which assets to set up on a depreciation schedule.

WORDS YOU SHOULD KNOW	
depreciation schedule	form used to illustrate and record ongoing declining values of an asset

- Set up only those assets with an expected useful life of more than one year and a cost of $100 or more at the time of purchase.

OBJECTIVE 5

Required Activities/
Resources
– Discussion

Distinguish between depreciable and nondepreciable assets.

Discuss the reasons why some assets actually appreciate in value but are depreciated for tax purposes.

☑ **NOTE:** All depreciable assets must have cost $100 or more at the time of purchase.

Depreciable

- Vehicles of which more than half of the mileage is used directly in the SAE Program
- Tractors, implements, machinery, and equipment
- Purchased or raised breeding animals
- Fences
- Barns and buildings
- Water systems
- Overhauls or major repairs that extend the life of an asset

Nondepreciable

- Personal cars, pickups, or motorcycles of which less than half of the mileage is used directly in the SAE Program

- Land and conservation improvements to land

  ☑ **NOTE:** Conservation improvements to land should be entered on the Expenses page under the land enterprise at the cost of the improvement. On the next ending inventory completed after the improvement is done, write in the description of the improvement under the land. This will increase the value of the land enterprise on the inventory, but only by the amount of the cost of the improvement. This is the only way land value can be increased.

- Items purchased for resale
- Personal residences
- Feed, fuel, fertilizer, and consumable supplies

OBJECTIVE 6

Optional Activities/ Resources in Instructor's Guide

Match assets to their suggested allowed years of depreciation.

- Tractors and implements - Seven years
- Vehicles – Three years
- Barns and buildings – Twenty years
- Fences – Seven years
- Breeding stock
    - Cattle – Five years
    - Sheep – Five years
    - Swine – three years
- Other assets – Actual expected productive life

OBJECTIVE 7

Optional Activities/ Resources in Instructor's Guide

Arrange in order the steps for handling depreciable assets in the FFA *Record Book*.

1. On the date the item is acquired, record the cost of the item on the Expenses page under the appropriate enterprise column.

2. Compute annual depreciation to be taken.

   ☑ **NOTE:** If the item is not acquired at the beginning of the calendar year, then a partial year's depreciation will have to be computed for this first year and for the last year.

3. Record the necessary information on the Depreciation Schedule in the FFA *Record Book*.

4. Record the Ending of Year Balance figure on the ending inventory as the value of the item on that date, according to the depreciation schedule.

   ☑ **NOTE:** The value of the item at this time should be equal to the cost minus the depreciation taken this year.

5. Record in the new book as beginning inventory value for the item the exact ending inventory value from the previous book.

6. Record necessary information on the Depreciation Schedule in the new book.

   ☑ **NOTE:** This time all the columns should have an entry. The Prior Depreciation column should have the amount taken off in the FFA *Record Book* just completed. This column, in future books will continue to be a total each year of the amounts take off in previous years.

OBJECTIVE 8 **Complete the Assignment Sheet.**

ASSIGNMENT SHEET

DEPRECIATION

C4

Name ______________________________ Score __________

OBJECTIVE 8

Complete a depreciation schedule.

INTRODUCTION

The SAE Programs of many FFA members have assets that need to be set up on a depreciation schedule. It is important to understand how the depreciation schedule is used and how certain information is transferred from one year to the next.

INSTRUCTIONS

Study the example. Then complete the depreciation schedule for the sample assets using the depreciation schedule provided.

Reading Comprehension
- Gain factual information

Functional Reading
- Interpret forms and records
- Follow written instructions

Operation and Calculation
- Calculate with decimals

Functional Math
- Use calculator for computation

Situation:

April 1 of your ninth-grade year, you purchased a 60-bushel self-feeder for hogs. It cost $300 and has a productive life of eight years. The following example shows the first partial year's depreciation and the next full year's depreciation using the straight-line method.

Transactions:

$300 Balance to depreciate

$300 divided by 8 years' life = $37.50 Annual Depreciation

$37.50 x 9/12 (partial first year) = $28.13 depreciation for partial year

DEPRECIATION SCHEDULE (1st CALENDAR YEAR)

Item and Description	Date Acquired	Cost Information			Adjustments	Balance to Depreciate	Life	Method	Annual Depreciation % or $	Remaining Book Value at Start of Year	Depreciation This Year - Amount	Remaining Book Value
		Remaining Book Value of Trade-In	Cash Difference Paid	Total Cost Basis								
1	2	3	4	5	6	7	8	9	10	11	12	13
60 bu. feeder	4/1	0	300.00	300.00	0	300.00	8	SL	37.50	300.00	28.13	271.87

DEPRECIATION SCHEDULE (2nd CALENDAR YEAR)

Item and Description	Date Acquired	Cost Information			Adjustments	Balance to Depreciate	Life	Method	Annual Depreciation % or $	Remaining Book Value at Start of Year	Depreciation This Year - Amount	Remaining Book Value
		Remaining Book Value of Trade-In	Cash Difference Paid	Total Cost Basis								
1	2	3	4	5	6	7	8	9	10	11	12	13
60 bu. feeder	4/1	0	300.00	300.00	0	300.00	8	SL	37.50	271.87	37.50	234.37

Situation:

On July 1, you bought a portable farrowing house for $2500. It will have a ten year productive life. Using the straight-line method, show the entries on the depreciation schedule for the first partial year and the first full year.

DEPRECIATION SCHEDULE (1st CALENDAR YEAR)

Item and Description	Date Acquired	Cost Information			Adjustments	Balance to Depreciate	Life	Method	Annual Depreciation % or $	Remaining Book Value at Start of Year	Depreciation This Year - Amount	Remaining Book Value
		Remaining Book Value of Trade-In	Cash Difference Paid	Total Cost Basis								
1	2	3	4	5	6	7	8	9	10	11	12	13

DEPRECIATION SCHEDULE (2nd CALENDAR YEAR)

Item and Description	Date Acquired	Cost Information			Adjustments	Balance to Depreciate	Life	Method	Annual Depreciation % or $	Remaining Book Value at Start of Year	Depreciation This Year - Amount	Remaining Book Value
		Remaining Book Value of Trade-In	Cash Difference Paid	Total Cost Basis								
1	2	3	4	5	6	7	8	9	10	11	12	13

OBJECTIVE SHEET

CLOSING RECORDS

C5

INTRODUCTION

At the end of the recordkeeping period, all accounts must be closed out. In closing the records, a picture is formed of the agricultural operation. Plans and adjustments can be made to necessary activities for the upcoming time period. Appropriate totals are then carried forward to the new recordkeeping period. It is essential that accuracy be achieved in this phase of recordkeeping.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Go to your classroom library or your school library and find a magazine that deals with agriculture or accounting. Find an article that deals with recordkeeping in agriculture and read it.
WRITING:	Write a short essay on how the information in the news article might affect your future agricultural enterprises.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheet and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Arrange in order steps for completing an ending inventory.
2. Arrange in order steps for totaling Sales and Income pages and Expense pages.
3. State the formulas for calculating total head owned or acres harvested during the year.
4. Arrange in order steps for completing the FFA *Record Book* Summary pages.
5. State the steps for completing the Net Worth Statement (Balance Sheet) page.
6. Arrange in order steps for completing the Financial Analysis page.
7. Arrange in order steps for starting a new FFA *Record Book*.
8. Close out an FFA *Record Book*. (Assignment Sheet)

INFORMATION SHEET

CLOSING RECORDS

C5

OBJECTIVE 1

Optional Activities/
Resources in
Instructor's Guide

Arrange in order steps for completing an ending inventory.

1. Fill out the date line.
2. Label the enterprise columns to match those in the rest of the book.
3. Value the assets using the same procedures as those used in the beginning inventory.
4. Total all columns. (Figure 1)

FIGURE 1

ENDING INVENTORY

December 31, 19_____

Item or Description	Total Value		Value to the Enterprise											
			1 SWINE		2 BEEF		3 WHEAT		4 LAND		5 EQUIP.		6	
Ending Inventory Totals	16,410	50	560	00	936	00	914	50	14,000	00				

OBJECTIVE 2

Optional Activities/
Resources in
Instructor's Guide

Arrange in order steps for totaling Sales and Income pages and Expense pages.

1. Transfer to the Sales and Income page the total, by enterprise, of all exhibition record income.

   ☑ **NOTE:** Exhibition record income should be recorded only once a year at closing when all exhibition record income is totaled and transferred on December 31.

2. Post the prize money for each enterprise under the appropriate enterprise column.

   ☑ **NOTE:** Once the totals for the different enterprises have been calculated, a sample entry would look like Figure 2.

FIGURE 2

SALES AND INCOME

Date	Item of Sale and Description	Total Credit	Credit to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6
	Balance Forwarded							
12/31	Prize Money Transfer	14 00	14 00					
Total Sales and Other Income								

3. Total all Sales and Income columns.

4. Total all Expense columns.

☑ **NOTE:** On the Sales and Income page, and on the Expenses page, the final totals of all enterprise columns must be equal to the total Sales and Income and total Expenses columns, respectively.

OBJECTIVE 3

Optional Activities/ Resources in Instructor's Guide

State the formulas for calculating total head owned or acres harvested during the year.

- Livestock

Total Head During Year = Total Head on Ending Inventory + Total Head Sold + Total Head on Loss Record

☑ **NOTE:** Total head bought will be taken from the Expenses page. Total head raised will come from the livestock yield form. Each livestock enterprise classification should be calculated separately.

- Acreage

Total Acres During Year = Total Acres Harvested During Calendar Year

☑ **NOTE:** Figure each crop variety as a separate enterprise. On hay crops, such as alfalfa, that are harvested more than once every year, count the average only once.

OBJECTIVE 4

Optional Activities/ Resources in Instructor's Guide

Arrange in order steps for completing the FFA *Record Book* Summary pages.

1. Label enterprise column names from left to right exactly as they are from left to right in the rest of the FFA *Record Book*.
2. Transfer ending inventory values for each enterprise column from Ending Inventory page to appropriate line on the Earnings Summary page.
3. Transfer beginning inventory values for each enterprise column on the Beginning Inventory page to the appropriate line on the Earnings Summary page.
4. Calculate the inventory difference on the Earnings Summary page by subtracting the beginning inventory from the ending inventory.
5. Transfer Sales and Income column totals to the appropriate income line for each enterprise on the Earnings Summary page.
6. Transfer Expense page column totals to the appropriate income line for each enterprise on the Earnings Summary page.
7. Calculate net cash income on the Earnings Summary page by subtracting the expenses from the income.
8. Calculate the net profit or loss by adding the inventory difference and net cash income on the Earnings Summary page.

OBJECTIVE 5

Optional Activities/
Resources in
Instructor's Guide

State the steps for completing the Net Worth Statement (Balance Sheet) page.

1. Complete the ending column by following the same procedures used in completing the beginning column.

2. Compute the ending net worth by subtracting the ending total liabilities from the ending total assets.

OBJECTIVE 6

Optional Activities/
Resources in
Instructor's Guide

Arrange in order steps for completing the Financial Analysis page.

1. Complete beginning balances by adding cash on hand, checking account, savings account figures from the Beginning Student's Net Worth Statement.

2. Transfer total ownership income figure from the Sales and Income page to the Financial Analysis page.

3. Transfer total Wage-Earning Income figure to the Financial Analysis page.

4. Transfer the total of Earnings from Nonagricultural Activities to the Financial Analysis page.

5. Transfer the total of Gifts and Income Other than Earnings to the Financial Analysis page.

6. Record the amount of new loans received during the current year.

   ☑ **NOTE:** This figure is the principal only. This amount does not include loans that were made in previous years.

7. Compute the Total Dollars Available by adding the beginning balances, ownership income, wage-earning income, nonagricultural income, gifts and income other than earnings, and loans taken out during the current year.

8. Complete the ending balances by adding cash on hand, checking account, and savings account figures from ending net worth statement.

9. Transfer total ownership expense figure from the Expenses page to the Financial Analysis page.

   ☑ **NOTE:** This should include expenses for which labor was exchanged.

10. Transfer total Wage-Earning Expense figure to the Financial Analysis page.

11. Record the amount of loan payments made during the current year to the Financial Analysis page.

12. Transfer the total Gifts and Donations made by student figure to the Financial Analysis page.

13. Compute the Total Dollars Spent by adding ending balances, ownership expenses, wage-earning expenses, loan payments made, and gifts and donations made by student.

14. Compute the Difference by subtracting the Total Dollars Spent from the Total Dollars Available.

OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

Arrange in order steps for starting a new FFA *Record Book*.

1. Fill out the front cover.
2. Label the enterprise columns throughout the new book to match those in the previous book.
3. Fill out the agreement.
4. Fill out the Student's Plan for a Long-Term Supervised Agricultural Experience Program.
5. Transfer the exact ending inventory information from the previous book to the new beginning inventory.
6. Transfer the exact ending net worth information from the previous book to the new beginning net worth.
7. Fill out the accounts payable and receivable if they have not been closed out.
8. Transfer into the new FFA *Record Book* breeding record information for those animals that are still pregnant.
9. Transfer the depreciation schedule information to the new FFA *Record Book*.

OBJECTIVE 8

Complete the Assignment Sheet.

ASSIGNMENT SHEET

CLOSING RECORDS

C5

Name ______________________ Score __________

OBJECTIVE 8

Close out an FFA *Record Book*.

INSTRUCTIONS

Using the records on the pages that follow, close out the record book for the current year. Accuracy is essential, so remember to double check your figures.

Reading Comprehension
- Gain factual information

Functional Reading
- Interpret forms and records
- Follow written instructions

Operation and Calculation
- Calculate with decimals

Functional Math
- Use calculator for computation

BEGINNING INVENTORY

January 1, 19______

Item or Description*	Total Value		Value to the Enterprise											
			1 SWINE		2 BEEF		3 WHEAT		4 LAND		5 EQUIP.		6	
2 reg. Hamp gilts, 175 lb. each														
$92 invested in each	184	00	184	00										
1 Simmental Cow (purchased														
as cow-calf pair)	600	00			600	00								
1 Simmental calf (4 months														
old and will be a show steer)														
Production cost invested =	246	00			246	00								
Plan to work ground and														
plant wheat later	—						—							
20 acres farm land to														
plant wheat crop on	14,000	00							14,000	00				
1 Portable A-Frame hog house														
(Purchased July 1 for $500)														
See depreciation schedule	485	00	485	00										
200# of hog feed @13.^{00}/cwt	26	00	26	00										
Swine show equipment	12	00	12	00										
Beef show equipment	42	00			42	00								
(halter, brush, comb)														
400 bu. wheat @$4.^{30}/bu.	1,720	00					1,720	00						
Beginning Inventory Totals	17,315	00	707	00	888	00	1,720	00	14,000	00				

ENDING INVENTORY

December 31, 19______

Item or Description	Total Value		Value to the Enterprise											
			1 SWINE		2 BEEF		3 WHEAT		4 LAND		5 EQUIP.		6	
1 Hamp Barrow	93	00	93	00										
1 Portable A-Frame														
hog house	455	00	455	00										
Swine show equipment	12	00	12	00										
1 Simmental Cow (2½ yr. old)	600	00			600	00								
1 Simmental Steer Calf														
(8 months old)	326	00			326	00								
20 acres of growing wheat														
(Production cost + 1 yr.														
rent to Land enterprise)	914	50					914	50						
20 acres land	14,000	00							14000	00				
Beef show equipment	42	00			42	00								
Ending Inventory Totals														

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This balance sheet is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

A. Student's Assets	**Beginning**	**Ending**
	Date 9-1-93	Date
1. Total inventory value (from pages 6 and 7)	$ 17,315.00	$
2. Accounts receivable (from page 32)	$ —	$ —
3. Cash money on hand	$ 12.17	$ 2.25
4. Checking account (1st Nat'l. Bank)	$ 111.06	$ 97.60
5. Savings account (Liberty Fed. Sav. + Loan)	$ 2,134.18	$ 2,179.74
6. Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	$	$
12 ga. shotgun	$ 160.00	$ 160.00
1-year-old motorcycle	$ 700.00	$ 700.00
	$	$
	$	$
	$	$
A. TOTAL ASSETS	$ 20,432.41	$
B. Student's Liabilities		
1. Unpaid bills (Central Feed Store)	$ 47.51	$ —
2. Accounts payable (notes and mortgages) from page 32		
	$	$ —
3. Other liabilities (specify)	$	$ —
	$	$ —
	$	$ —
B. TOTAL LIABILITIES	$ 47.51	$

NET WORTH (A minus B) Beginning $20,384.90 NET WORTH (A minus B) Ending $

(NOTE: Beginning net worth values in this book must be the same as the ending net worth values of the previous book; ending values of this book must be the same as the beginning net worth values of the next book.)

SALES AND INCOME

Date	Item of Sale and Description	Total Credit	Credit to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6 AGRI-BUSINESS
9/15	1yr. rent of land for wheat (20 acres @ $25/acre)	500 00				500 00		
9/20	10 hrs. tractor driving for Mr. Smith	40 00						40 00
9/22	400 bu. wheat at $4.42/bu.	1,768 00			1,768 00			
9/27	Exchange labor for Sept. helping plant parents'							
	wheat (38 hrs.) in exchange for equip. use	152 80						152 80
9/30	Exchange labor for Sept. pasture rent	10 00						10 00
10/24	1 Bred Hamp Gilt	185 00	185 00					
10/31	Exchange labor for Oct. pasture rent							
	for cow and calf	10 00						10 00
11/8	1 Bred Hamp Gilt	225 00	225 00					
11/30	Exchange labor for							
	Nov. pasture rent for cow and calf	10 00						10 00
12/1	1 Cross Barrow	90 00	90 00					
12/1	Rented out wheat pasture for Dec.	80 00			80 00			
12/31	Exchange labor for pasture rent for Dec.	10 00						10 00
Forward Totals								

EXHIBITION RECORD

Record all exhibits related to ownership program.

Date	Kind of Exhibit	Where Exhibited	Placings	Prize Won	
10/7	Hamp Gilt	State Fair	1st	12	00
10/7	Hamp Gilt	State Fair	7th	2	00
			Total		

At end of year, transfer total to Sales and Income page, and credit to proper enterprise(s).

EXPENSES

Date	Item of Expense and Description	Total Credit		Charge to Enterprise											
				1 SWINE		2 BEEF		3 WHEAT		4 LAND		5 EQUIP.		6	
9/12	200# hog feed	26	00	26	00										
9/15	30 bu. @ 5.15/bu. seed wheat	154	50					154	50						
9/15	1 yr. of land for wheat														
	(20 acres @ \$25.00/acre	500	00					500	00						
9/16	Entry fee for Gilts														
	(State Fair)	8	00	8	00										
9/22	2 tons 10-20-10 @ \$130/T for wheat	260	00					260	00						
9/27	Use of Dad's equip. for discing and														
	planting wheat	152	80					152	80						
9/30	Pasture rent in exchange for labor	10	00			10	00								
10/10	200# hog feed	26	20	26	20										
10/11	Breed fee for 2 gilts @ \$50.00/gilt	100	00	100	00										
10/27	1 Hamp Barrow	75	00	75	00										
10/27	1 Cross Barrow	75	00	75	00										
10/31	Oct. pasture rent in exchange for labor	10	00			10	00								
11/12	500# hog feed	66	25	66	25										
11/30	Nov. pasture rent in exchange for labor	10	00			10	00								
12/31	Dec. pasture rent in exchange for labor	10	00			10	00								
Forward Totals															

EARNINGS SUMMARY

OWNERSHIP

			Enterprise			
	Program Totals		1 SWINE		2 BEEF	
1. Ending Inventory (p. 7)						
2. Beginning Inventory (p. 6)						
3. Inventory Difference (1–2)						
4. Income (p. 11)						
5. Expenses (p. 17)						
6. Net Cash Income (4–5)						
7. Net Profit or Loss (3+6)						

WAGE EARNING

			Job Titles or Types of Work			
	Program Totals		1		2	
8. Ending Inventory (p. 23)						
9. Beginning Inventory (p. 23)						
10. Inventory Difference (8–9)						
11. Earnings (p. 25)						
12. Expenses (p. 25)						
13. Net Income (11–12)						
14. Net Profit or Loss (10+13)						

15. Grand Totals (7+14)	

EARNINGS SUMMARY

OWNERSHIP

Enterprise

3 WHEAT		4 LAND		5 EQUIP.		6	

WAGE EARNING

Job Titles or Types of Work

3		4		5		6	

OBJECTIVE SHEET

THE LIVESTOCK INDUSTRY

D1

INTRODUCTION

The livestock industry contributes over 2.5 billion dollars annually to Oklahoma's economy. One of the largest livestock terminals in the United States is the Oklahoma City Terminal. The record for marketing more feeder and stocker cattle than any other terminal is held by the OKC Terminal. In 1992 the market handled over 870,000 head of cattle and calves, which meant gross sales of approximately 362 million dollars. The market also handled 240,000 hogs, with gross sales of approximately 18.7 million dollars.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Read *Cattle Cycles, Profits and Risks*, by John Ikerd. OSU Fact Sheet No. 453.
WRITING:	Write a one-page essay about the handout. Give your definition of profit and risk. State your opinion about whether you would want to enter this area of the livestock industry based on the information in this handout.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Arrange in order the phases of agricultural enterprises.
2. List the six major types of livestock produced in Oklahoma.
3. Identify the top five states that lead production in each livestock enterprise.
4. Arrange agricultural livestock commodities according to their production levels.
5. Match selected livestock products to average yearly American consumption per person.
6. State the 1992 distribution of the consumer's beef dollar.
7. Match to their correct job descriptions occupational titles related to the livestock industry.
8. Interpret general trends in the livestock industry. (Assignment Sheet 1)
9. Interpret price changes in the livestock industry. (Assignment Sheet 2)
10. Calculate percentage of price increase or decrease for agricultural products. (Assignment Sheet 3)
11. Analyze the effect of the livestock industry on county and state economies. (Assignment Sheet 4)

INFORMATION SHEET

THE LIVESTOCK INDUSTRY

D1

OBJECTIVE 1

Optional Activities/ Resources in Instructor's Guide

Arrange in order the phases of agricultural enterprises.

WORDS YOU SHOULD KNOW	
agriculture industry	individuals and companies involved in production, processing, and distribution of farm products
distribution	process by which agricultural products are made available to the consumer
production	process of growing agricultural products

1. production

   EXAMPLES: farmers, ranchers

2. processing

   EXAMPLES: flour mills, packing plants, graders, processing plants

3. distribution

   EXAMPLES: wholesalers, retailers

4. consumption

OBJECTIVE 2

Required Activities/
Resources
- Discussion

Optional Activities/
Resources in
Instructor's Guide

List the six major types of livestock produced in Oklahoma.

Discuss the question "What commodity leads the livestock industry?"

WORDS YOU SHOULD KNOW

feeder cattle	beef animals that have been grown on grass and are ready for the feedlot
slaughter cattle	steers or heifers that have been fed over one hundred days in a feed lot and are ready for processing
stocker cattle	beef animals that are to be placed on pasture for further growth

- beef cattle and calves
- dairy cattle and products
- swine
- sheep
- horses
- poultry

OBJECTIVE 3

Required Activities/
Resources
- Transparency Masters 1-6
- Discussion

Optional Activities/
Resources in
Instructor's Guide

Identify the top five states that lead production in each livestock enterprise.

You will see transparencies showing livestock production by states.

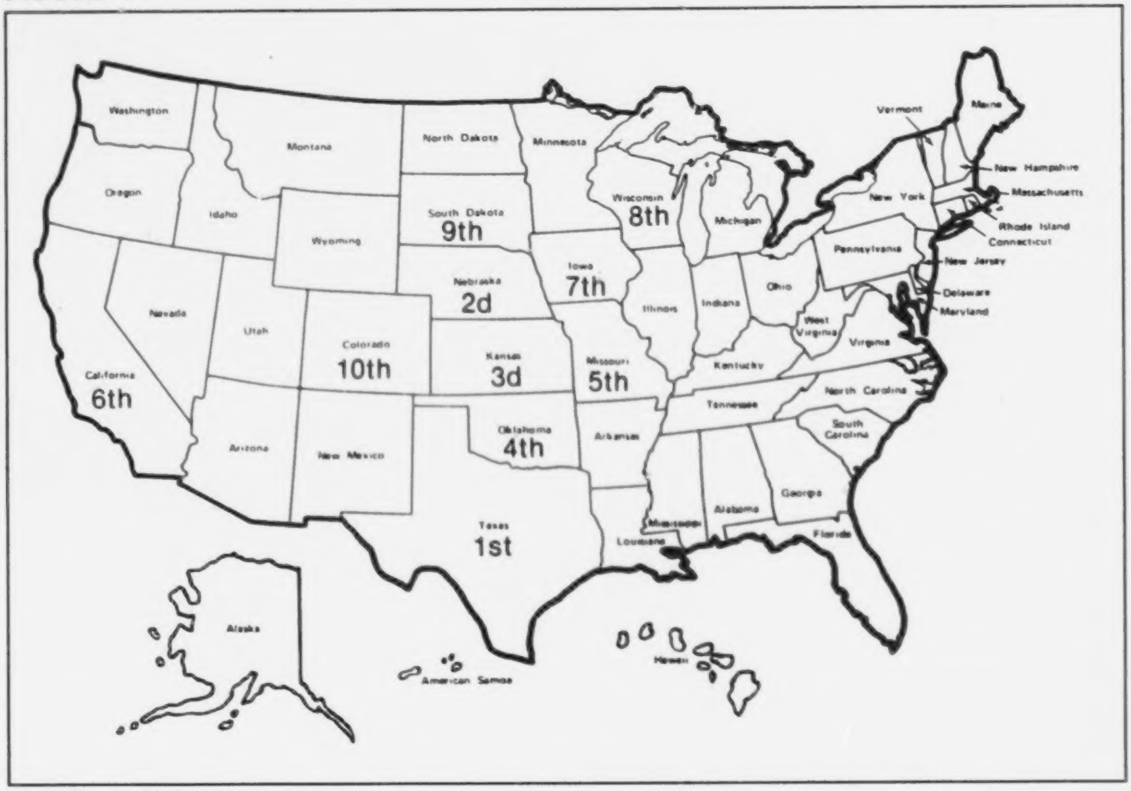
Discuss Oklahoma's ranking as a livestock industry producer.

☑ **NOTE:** The following statistics are based on 1991-1992 surveys. States are ranked from most productive to less productive.

- beef cattle

1. Texas
2. Nebraska
3. Kansas
4. Oklahoma
5. Missouri

FIGURE 1


Washington
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Nevada
Utah
Colorado
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Kansas
3d
Missouri
5th
Illinois
Indiana
Ohio
West Virginia
Kentucky
Virginia
Pennsylvania
New York
Vermont
Maine
New Hampshire
Massachusetts
Rhode Island
Connecticut
New Jersey
Delaware
Maryland
California
6th
Arizona
New Mexico
Oklahoma
4th
Arkansas
Tennessee
North Carolina
South Carolina
Georgia
Alabama
Mississippi
Louisiana
Texas
1st
Florida
Alaska
American Samoa
Hawaii

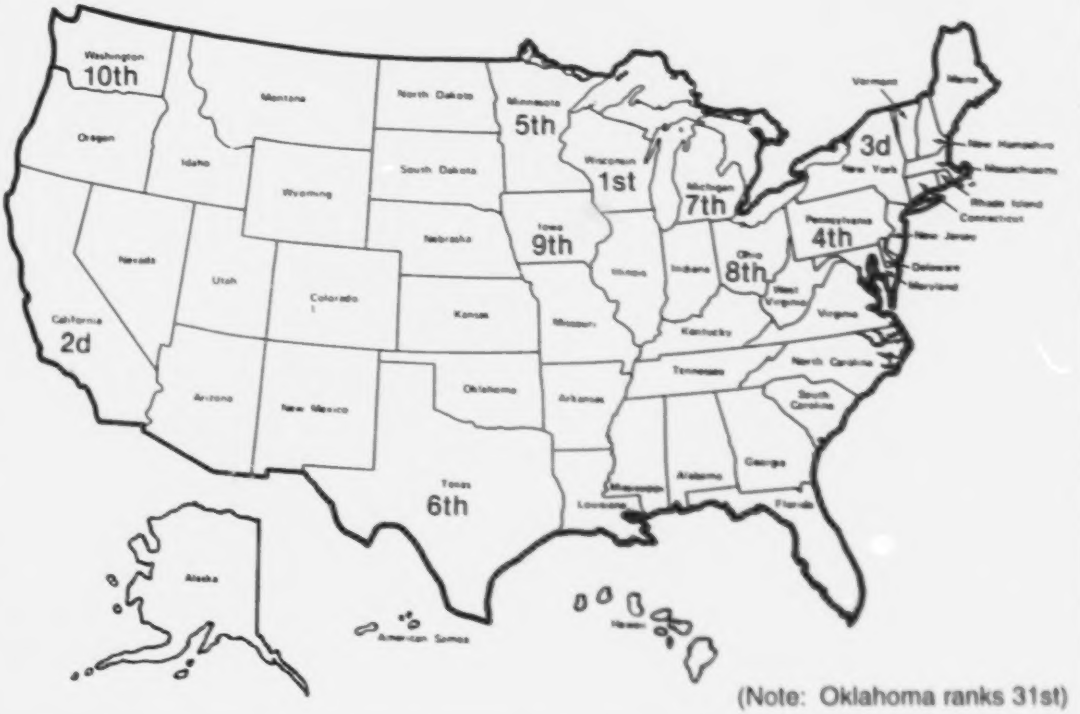
BEST COPY AVAILABLE

- dairy cattle

1. Wisconsin
2. California
3. New York
4. Pennsylvania
5. Minnesota

☑ **NOTE:** Oklahoma ranks thirty-first.

FIGURE 2


Washington
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Wyoming
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South Dakota
Nebraska
Kansas
Oklahoma
Texas
6th
Minnesota
5th
Iowa
9th
Missouri
Arkansas
Louisiana
Wisconsin
1st
Illinois
Michigan
7th
Indiana
Ohio
8th
Kentucky
Tennessee
Mississippi
Alabama
Georgia
Florida
South Carolina
North Carolina
Virginia
West Virginia
Pennsylvania
4th
New York
3d
Vermont
Maine
New Hampshire
Massachusetts
Rhode Island
Connecticut
New Jersey
Delaware
Maryland
Alaska
American Samoa
Hawaii

(Note: Oklahoma ranks 31st)

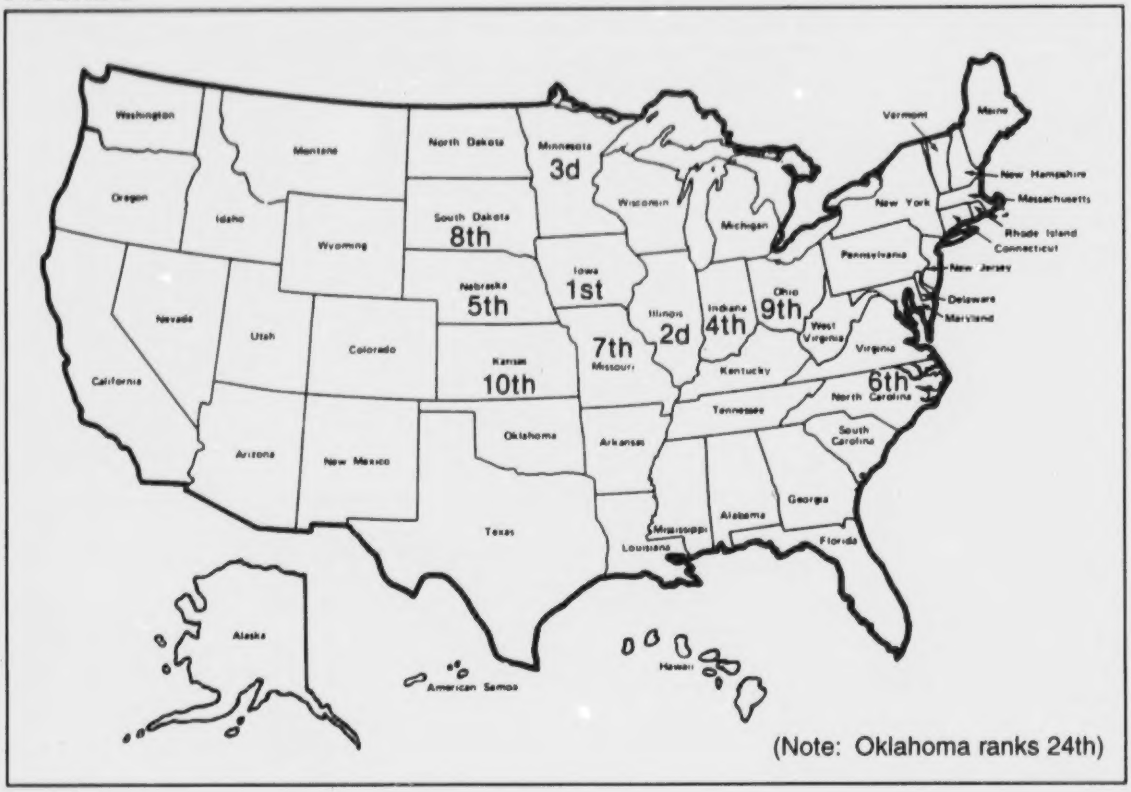
BEST COPY AVAILABLE

- swine

1. Iowa
2. Illinois
3. Minnesota
4. Indiana
5. Nebraska

☑ **NOTE:** Oklahoma ranks twenty-fourth.

FIGURE 3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New Mexico
North Dakota
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Kansas
10th
Oklahoma
Texas
Minnesota
3d
Iowa
1st
Missouri
7th
Arkansas
Louisiana
Wisconsin
Illinois
2d
Michigan
Indiana
4th
Ohio
9th
Kentucky
Tennessee
Mississippi
Alabama
Georgia
Florida
South Carolina
North Carolina
6th
Virginia
West Virginia
Pennsylvania
New York
Vermont
Maine
New Hampshire
Massachusetts
Rhode Island
Connecticut
New Jersey
Delaware
Maryland
Alaska
Hawaii
American Samoa

(Note: Oklahoma ranks 24th)

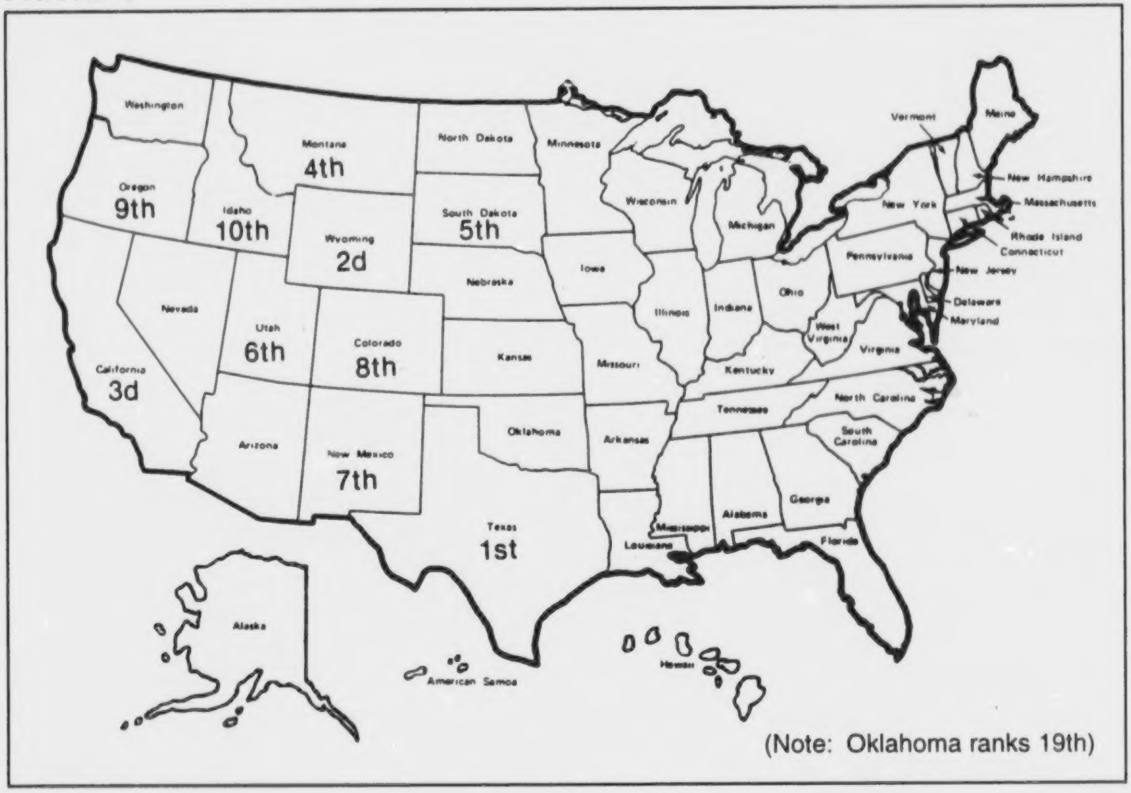
BEST COPY AVAILABLE

- sheep

1. Texas
2. Wyoming
3. California
4. Montana
5. South Dakota

☑ **NOTE:** Oklahoma ranks nineteenth.

FIGURE 4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Montana
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Wyoming
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North Dakota
South Dakota
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Minnesota
Wisconsin
Michigan
Vermont
Maine
New Hampshire
New York
Massachusetts
Rhode Island
Connecticut
Pennsylvania
New Jersey
Delaware
Maryland
Nevada
Utah
6th
Colorado
8th
Nebraska
Iowa
Illinois
Indiana
Ohio
West Virginia
Virginia
California
3d
Kansas
Missouri
Kentucky
North Carolina
Tennessee
South Carolina
Arizona
New Mexico
7th
Oklahoma
Arkansas
Texas
1st
Mississippi
Alabama
Georgia
Louisiana
Florida
Alaska
American Samoa
Hawaii

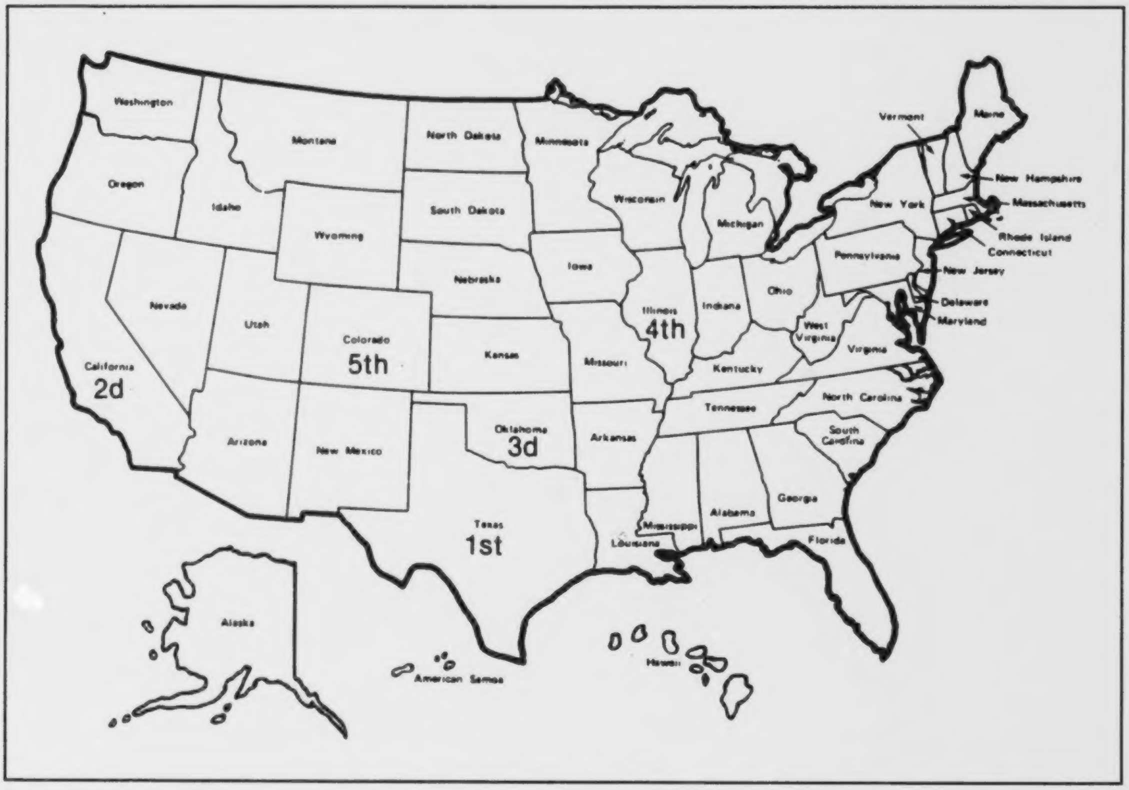
(Note: Oklahoma ranks 19th)

BEST COPY AVAILABLE

- horses

1. Texas
2. California
3. Oklahoma
4. Illinois
5. Colorado

FIGURE 5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New Mexico
North Dakota
South Dakota
Nebraska
Kansas
Oklahoma
3d
Texas
1st
Minnesota
Iowa
Missouri
Arkansas
Louisiana
Wisconsin
Illinois
4th
Michigan
Indiana
Ohio
Kentucky
Tennessee
Mississippi
Alabama
Georgia
Florida
South Carolina
North Carolina
Virginia
West Virginia
Pennsylvania
New York
Vermont
Maine
New Hampshire
Massachusetts
Rhode Island
Connecticut
New Jersey
Delaware
Maryland
Alaska
Hawaii
American Samoa

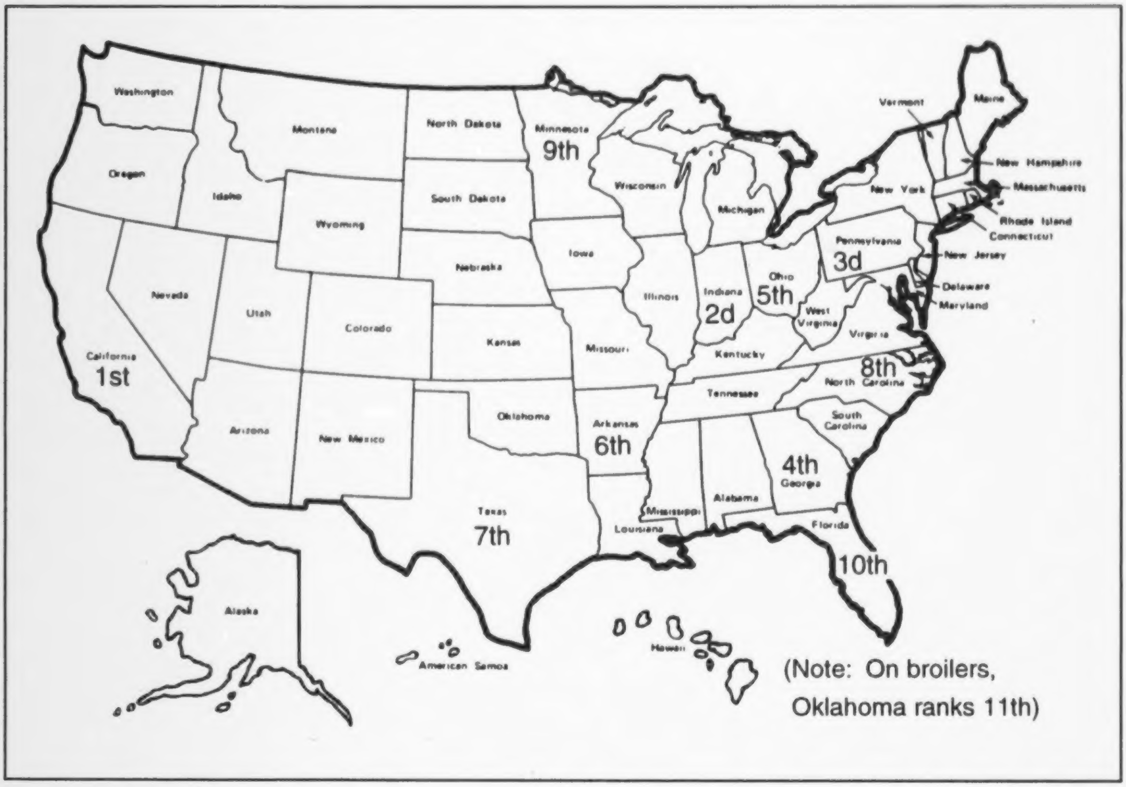
BEST COPY AVAILABLE

- poultry

1. California
2. Indiana
3. Pennsylvania
4. Georgia
5. Ohio

☑ **NOTE:** Oklahoma ranks eleventh.

FIGURE 6


Washington
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9th
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Wisconsin
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Vermont
Maine
New Hampshire
Massachusetts
New York
Rhode Island
Connecticut
Wyoming
Nebraska
Iowa
Pennsylvania
3d
New Jersey
Delaware
Maryland
Nevada
Utah
Colorado
Illinois
Indiana
2d
Ohio
5th
West Virginia
Virginia
California
1st
Kansas
Missouri
Kentucky
8th
North Carolina
Tennessee
Oklahoma
Arkansas
6th
South Carolina
Arizona
New Mexico
4th
Georgia
Alabama
Mississippi
Texas
7th
Louisiana
Florida
10th
Alaska
American Samoa
Hawaii

(Note: On broilers, Oklahoma ranks 11th)

BEST COPY AVAILABLE

OBJECTIVE 4

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Arrange agricultural livestock commodities according to their production levels.

Discuss the question "Why is Texas the leading cattle producing state?"

WORDS YOU SHOULD KNOW	
commodity	product of agriculture EXAMPLES: beef, pork, lamb, dairy products

1. cattle and calves
2. winter wheat
3. all hay
4. poultry and eggs
5. milk production

☑ **NOTE:** Commodities are ranked from high to low according to value of production. Ranking and classification system are based on *Oklahoma Agricultural Statistics, 1992.*

OBJECTIVE 5

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Match selected livestock products to average yearly American consumption per person.

Discuss the question "How does the consumer's eating habits impact on agricultural livestock markets?"

WORDS YOU SHOULD KNOW	
beef	meat from cattle
consumer	individual who uses agricultural products
lamb	meat from a sheep
veal	meat from a young calf

- beef – 114 pounds
- dairy products – 562 pounds
- pork – 75 pounds
- lamb – 1.6 pounds
- poultry – 70 pounds

OBJECTIVE 6

Required Activities/
Resources
- Transparency Master 7
- Discussion

Optional Activities/
Resources in
Instructor's Guide

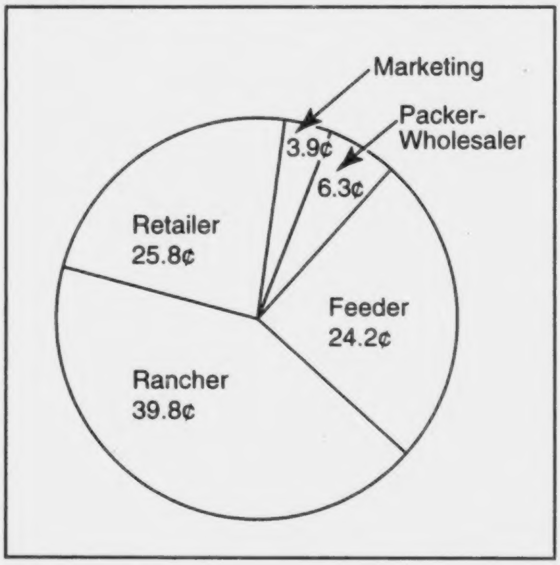
State the 1992 distribution of the consumer's beef dollar.

You will see a transparency.

Start a discussion by asking "What is the relationship between the distribution of the consumer's beef dollar and the time period each group keeps the animal?"

- rancher – 39.8¢
- retailer – 25.8¢
- feeder – 24.2¢
- packer/wholesaler – 6.3¢
- marketing – 3.9¢

FIGURE 7



OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

Match to their correct job descriptions occupational titles related to the livestock industry.

- **artificial inseminator** – injects female livestock with semen for breeding purposes
- **auctioneer** – handles bidding during livestock sales
- **cattle buyer** – purchases beef animals for farmers, feeders, or packing plants
- **commission agent** – sells livestock to farmers and ranchers
- **farm or ranch manager** – oversees the daily operations of a farm or ranch
- **farmhand or ranch hand** – performs any combination of tasks associated with the care of livestock or livestock facilities

  EXAMPLES: bedding, feeding, watering, loading, weighing, penning
- **feedlot employee** – performs any combination of tasks associated with feeding market cattle

  EXAMPLES: feeding, watering, assisting veterinarian, loading, unloading, penning
- **feedlot manager** – oversees the tasks associated with feeding market cattle
- **feedmill operator** – oversees tasks associated with preparing feed for livestock
- **rancher** – breeds or raises livestock for market, breeding stock, or show
- **stocker producer** – purchases cattle for grazing on wheat and/or pasture, and then markets the cattle before they reach slaughter weight
- **truck driver** – drives a rig and transports livestock, feed, and other products
- **veterinarian** – doctors and treats sick animals

OBJECTIVE 8	**Complete Assignment Sheet 1.**
OBJECTIVE 9	**Complete Assignment Sheet 2.**
OBJECTIVE 10	**Complete Assignment Sheet 3.**
OBJECTIVE 11	**Complete Assignment Sheet 4.**

ASSIGNMENT SHEET 1

THE LIVESTOCK INDUSTRY

D1

Name ______________________________ Score __________

OBJECTIVE 8

Interpret general trends in the livestock industry.

INTRODUCTION

Farmers and ranchers who can follow and forecast livestock trends and cycles can make sound economic decisions. Trends are the direction of movement of a commodity in terms of production and prices. Cycle is the recurring change in price and production of agricultural commodities.

Since the early 1960s there have been several trends and cycles affecting the livestock industry. For instance, the publication, *Oklahoma Agricultural Statistics 1992*, showed the following trends.

- Beef cattle inventories were down from the previous year by 1 percent and milk cow inventories were down by 4 percent.
- The number of cattle being placed in feedlots was up 4 percent from the previous year.
- Hog numbers have continued to decline over the last several years, but were up 26 percent from December, 1991. Breeding stock was up 1 percent. The 1992 pig crop was 32 percent larger than that of the previous year.
- Sheep and lamb inventories continued to drop showing a 21 percent decrease from the previous year.

EQUIPMENT AND SUPPLIES

- *Oklahoma Agricultural Statistics 1992*

INSTRUCTIONS

Plot the following information on the state and national graphs provided.

Reading Comprehension
- Gain factual information

Research and Reference
- Locate resources
- Use standard references

Functional Reading

- Interpret forms and records
- Follow written instructions

Functional Writing

- Complete forms and records

Data Analysis and Display

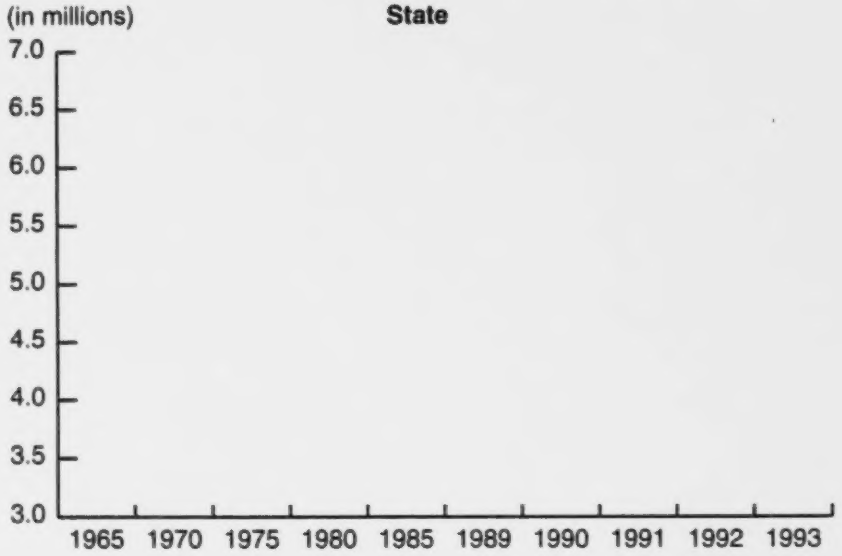
- Interpret charts and tables
- Interpret graphs
- Construct graphs

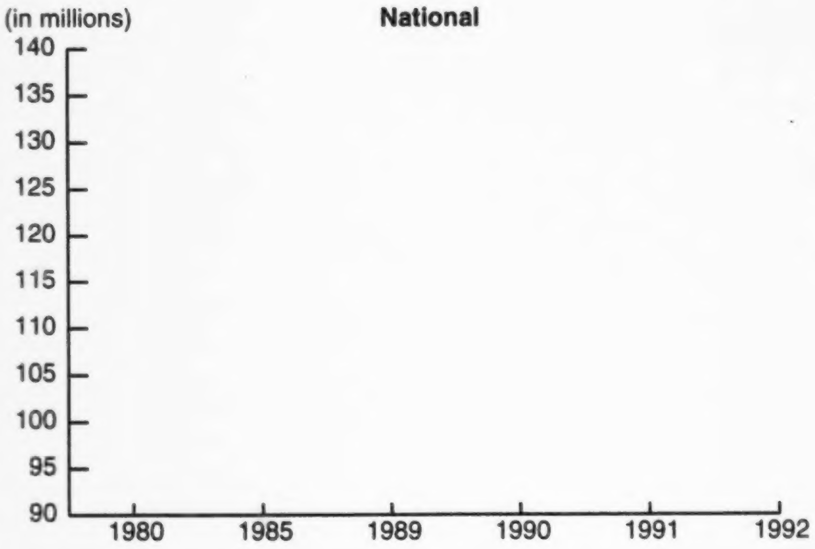
Cognitive Activities

- Collect/record information
- Draw conclusions

- All cattle and calves

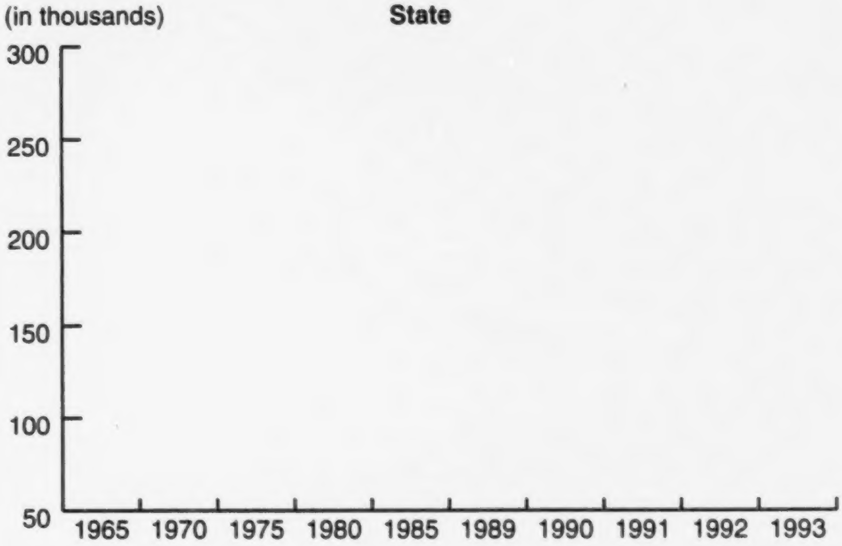
Year	State	National	Year	State	National
1965	4,352,000	Not Available	1989	5,050,000	98,065,000
1970	4,985,000	Not Available	1990	5,250,000	98,162,000
1975	6,500,000	Not Available	1991	5,550,000	98,896,000
1980	5,500,000	111,242,000	1992	5,400,000	100,110,000
1985	5,300,000	109,582,000	1993	5,400,000	Not Available

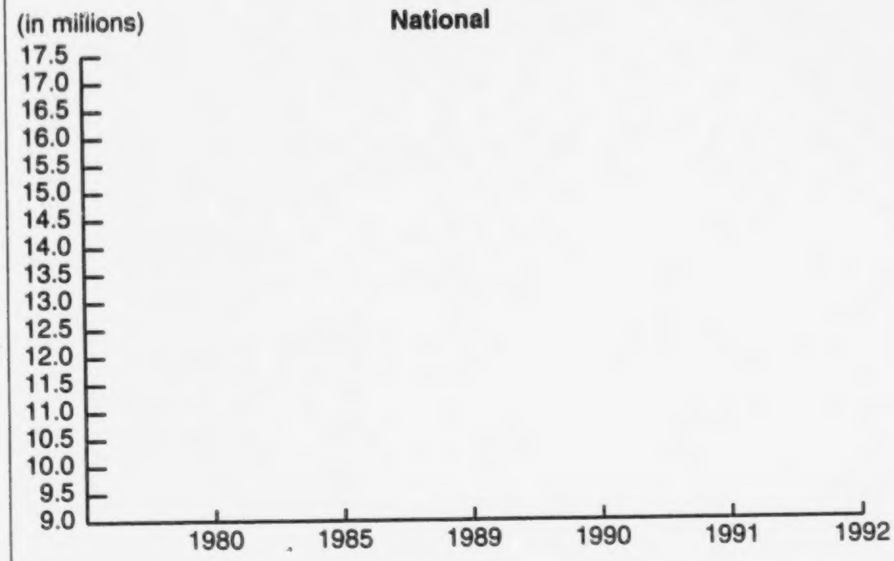



(in millions)
National
140
135
130
125
120
115
110
105
100
95
90
1980
1985
1989
1990
1991
1992

- All sheep and lambs

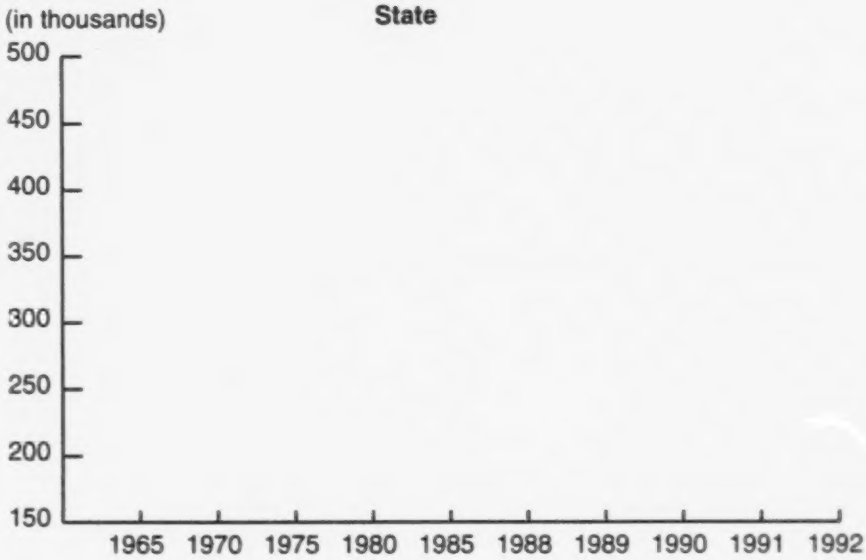
Year	State	National	Year	State	National
1965	149,000	Not Available	1989	136,000	10,858,000
1970	138,000	Not Available	1990	119,000	11,363,000
1975	89,000	Not Available	1991	135,000	11,200,000
1980	93,000	12,699,000	1992	145,000	10,850,000
1985	85,000	10,716,000	1993	115,000	Not Available

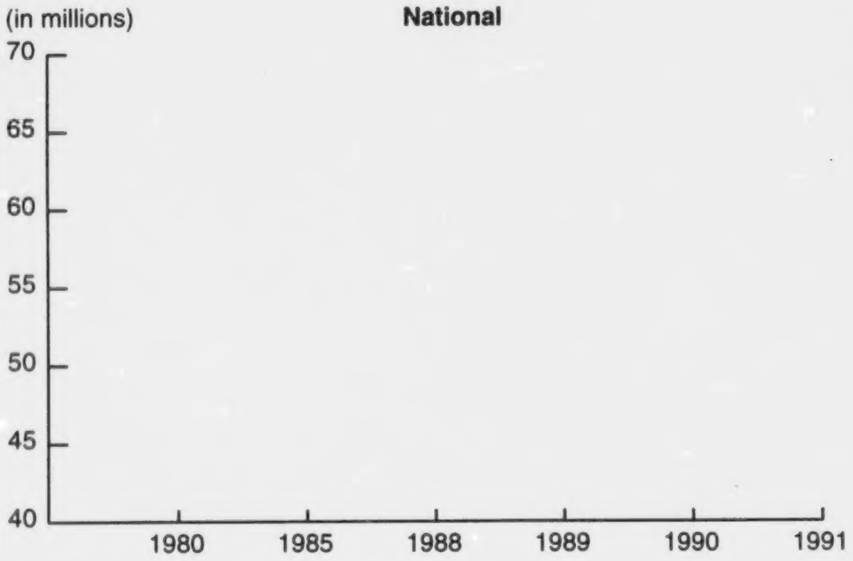



(in millions)
National
17.5
17.0
16.5
16.0
15.5
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0
1980
1985
1989
1990
1991
1992

- Hogs

Year	State	National	Year	State	National
1965	307,000	Not Available	1988	240,000	56,185,000
1970	442,000	Not Available	1989	230,000	55,880,000
1975	300,000	Not Available	1990	215,000	53,850,000
1980	350,000	65,255,000	1991	190,000	56,390,000
1985	200,000	52,250,000	1992	240,000	Not Available





(in millions)
National
70
65
60
55
50
45
40
1980
1985
1988
1989
1990
1991

Use the tables and plotted graphs to answer the following questions about livestock trends.

1. What year was the state's cattle inventory highest? ____________

2. What is the cattle inventory for the latest year? ____________

   Why? ____

   ____

   ____

   ____

3. With the change in inventory, what do you think will happen to the cattle prices?

   ____

   ____

   ____

4. What year was the state's lamb and sheep inventory the highest? ________________________________

5. What is the lamb and sheep inventory for the most recent year? ________________________________

6. Is the lamb and sheep inventory up or down? ____________

   Why? ____

   ____

   ____

7. What year was the state's hog inventory the highest? ________

8. What is the hog inventory for the most recent year? ________

9. Is the hog inventory up or down? ____________

   Why? ____

   ____

   ____

ASSIGNMENT SHEET 2

THE LIVESTOCK INDUSTRY

D1

Name ______________________________ Score __________

OBJECTIVE 9

Interpret price changes in the livestock industry.

INTRODUCTION

The price received by a farmer for a product is one of the primary factors that causes the farmer to expand or to decrease livestock operations.

EQUIPMENT AND SUPPLIES

- *Oklahoma Agricultural Statistics 1992*
- Assignment Sheet 1

INSTRUCTIONS

Record the following information as bar graphs on the graphs provided.

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Interpret forms and records
- Follow written instructions

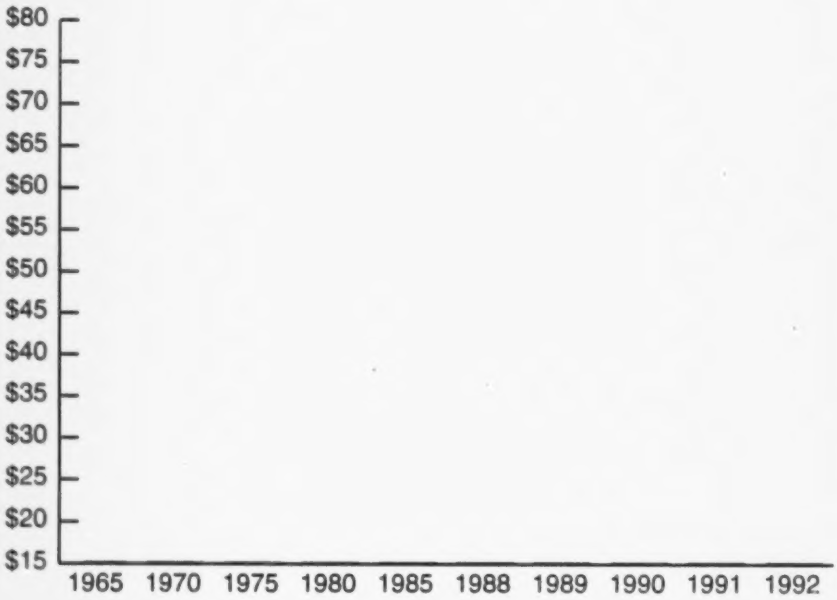
Functional Writing
- Complete forms and records

Data Analysis and Display
- Interpret charts and tables
- Interpret graphs
- Construct graphs

Cognitive Activities
- Collect/record information
- Draw conclusions

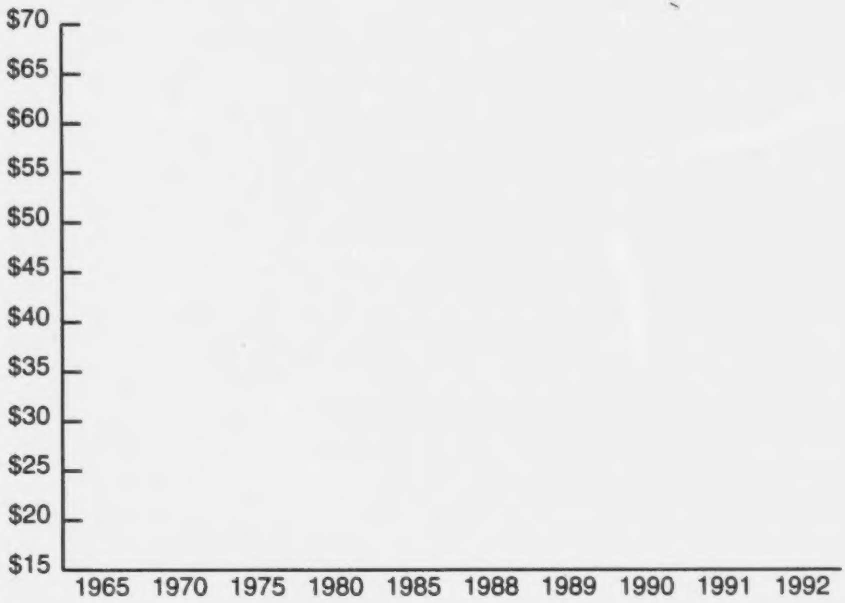
- Cattle

Year	Price per Hundredweight	Year	Price per Hundredweight
1965	$19.30	1988	$63.20
1970	27.30	1989	66.40
1975	30.00	1990	73.10
1980	62.70	1991	76.80
1985	49.90	1992	73.00



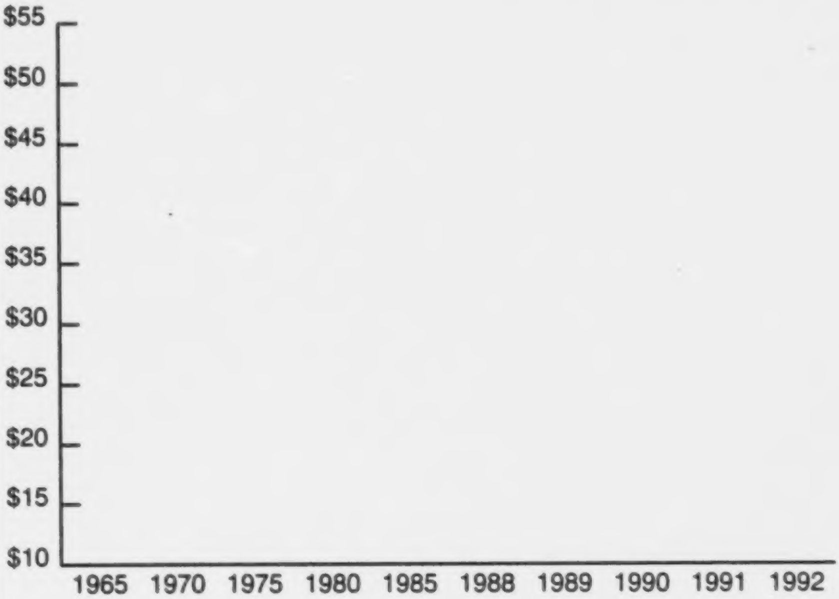
- Lambs

Year	Price per Hundredweight	Year	Price per Hundredweight
1965	$22.80	1988	$66.90
1970	26.00	1989	65.30
1975	39.30	1990	50.90
1980	62.00	1991	48.30
1985	65.90	1992	55.60



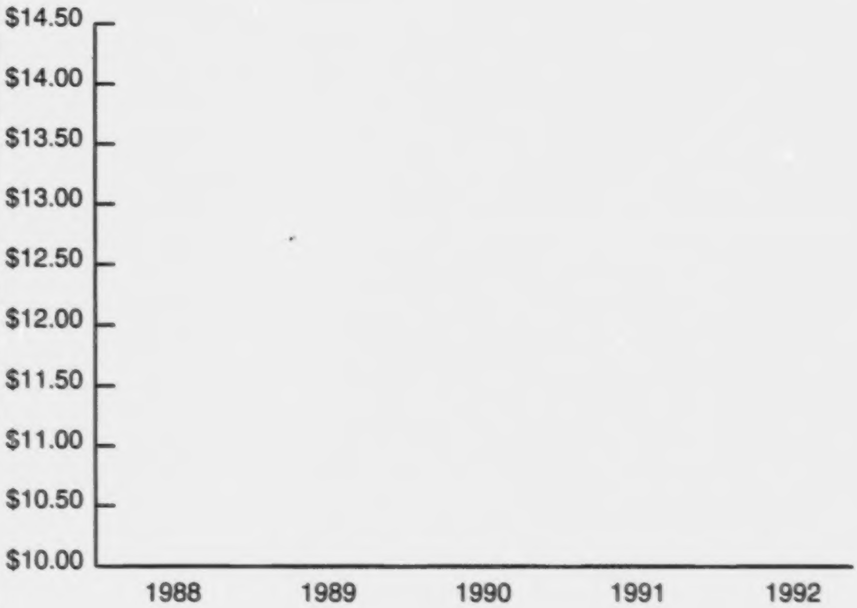
- Hogs

Year	Price per Hundredweight	Year	Price per Hundredweight
1965	$19.50	1988	$41.40
1970	22.60	1989	42.20
1975	46.50	1990	51.40
1980	37.20	1991	45.00
1985	44.60	1992	38.70



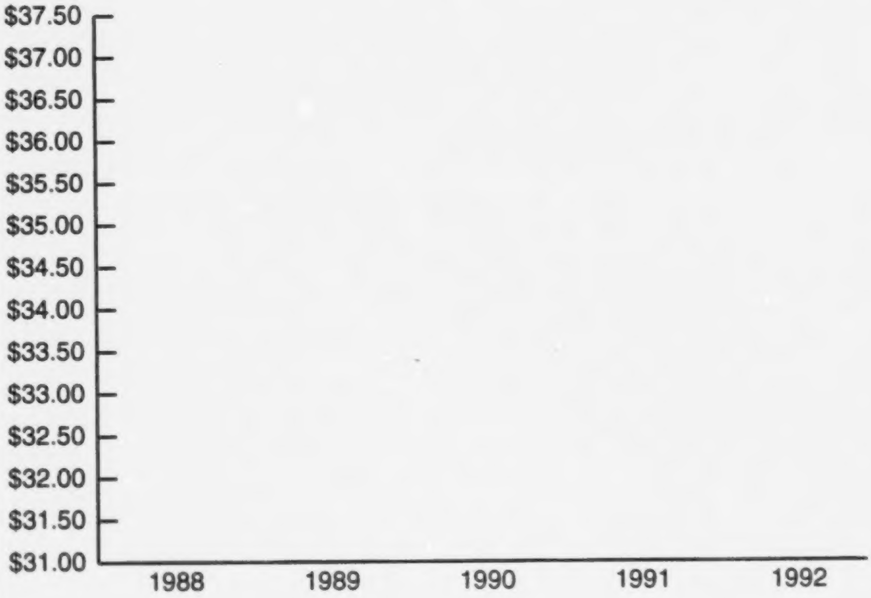
- Milk

Year	Price per Hundredweight
1988	$12.90
1989	14.00
1990	14.30
1991	12.70
1992	13.70



- Broilers

Year	Price per Hundredweight
1988	$33.00
1989	37.50
1990	33.50
1991	32.00
1992	34.00



Use the tables and plotted graphs and the information in Assignment Sheet 1 to answer the following questions about livestock prices.

1. What year did the rancher receive the highest price for cattle and calves?

   ____

2. Were the cattle numbers up or down at this period? ________

3. What year did the rancher receive the highest price for lambs?

   ____

4. Were the lamb numbers up or down at this period? ________

5. What year did the rancher receive the highest price for hogs?

   ____

6. Were the hog numbers up or down at this period? ________

7. What year did the dairy producer receive the highest price for milk?

   ____

8. What year did the producer receive the highest price for broilers?

   ____

ASSIGNMENT SHEET 3

THE LIVESTOCK INDUSTRY

D1

Name ______________________________ Score __________

OBJECTIVE 10

Calculate percentage of price increase or decrease for agricultural products.

INTRODUCTION

Prices of livestock products change from time to time because of a change in supply and demand, the economic situation of the country, and the political situation. This Assignment Sheet will give you practice in calculating price changes.

EQUIPMENT AND SUPPLIES

- *Oklahoma Agricultural Statistics 1992*
- Assignment Sheet 2

INSTRUCTIONS

Reading Comprehension
- Gain factual information
- Draw conclusions

Research and Reference
- Locate resources
- Use standard references

Functional Reading
- Follow written instructions

Functional Writing
- Complete forms and records

Operation and Calculation
- Round off numbers
- Calculate with decimals
- Solve formulae and equations

Part 1

In what year did the producers receive the highest price for products? What was the price?

	Year	Price
1. Cattle	__________	__________
2. Lambs	__________	__________
3. Hogs	__________	__________
4. Milk	__________	__________
5. Broilers	__________	__________

What were the average prices in 1992 for the following products?

6. Cattle ______________________________

7. Lambs ______________________________

8. Hogs ______________________________

9. Milk ______________________________

10. Broilers ______________________________

Math Application
- Solve percent problems

Data Analysis and Display
- Interpret graphs

Cognitive Activities
- Collect/record information
- Draw conclusions

Use current market information to identify prices for the following products.

11. Cattle ____________________

12. Lambs ____________________

13. Hogs ____________________

14. Milk ____________________

15. Broilers ____________________

Part 2

Calculate the percent of price increase or decrease for livestock products as compared to the highest year in the period from 1965 to 1992. Indicate whether this is an increase or decrease.

1. Cattle ____________________

2. Lambs ____________________

3. Hogs ____________________

4. Milk ____________________

5. Broilers ____________________

Calculate the percent of price decrease or increase for current livestock products as compared to 1992 prices. Indicate whether this is an increase or decrease.

6. Cattle ______________________________

7. Lambs ______________________________

8. Hogs ______________________________

9. Milk ______________________________

10. Broilers ______________________________

ASSIGNMENT SHEET 4

THE LIVESTOCK INDUSTRY

D1

Name ______________________________ Score __________

OBJECTIVE 11

Analyze the effect of the livestock industry on county and state economies.

EQUIPMENT AND SUPPLIES

- *Oklahoma Agricultural Statistics 1992*
- Assignment Sheet 1
- Assignment Sheet 3

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Research and Reference
- Locate resources
- Use standard references

Functional Reading
- Interpret forms and records
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences
- Compose essays
- Proofread and edit

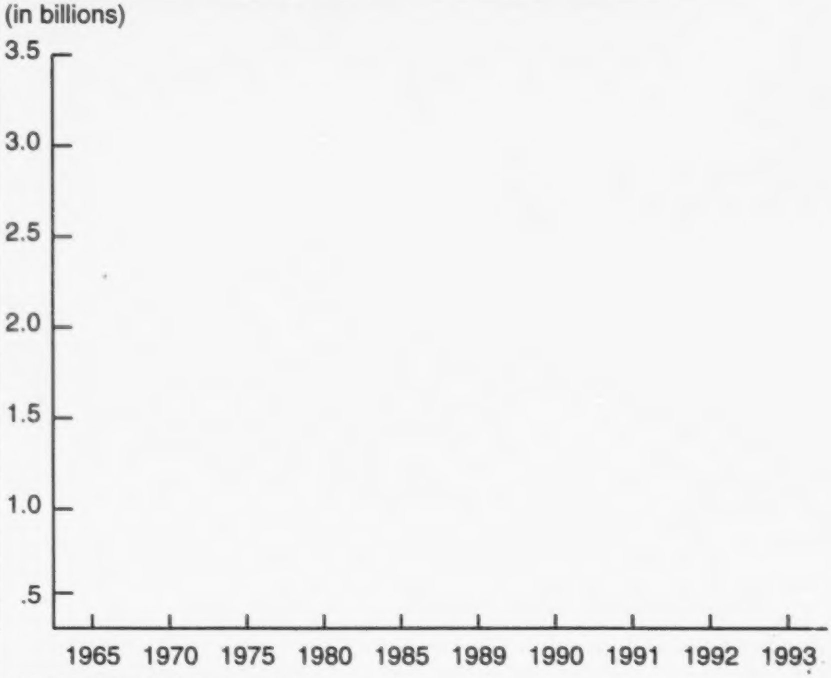
Functional Writing
- Complete forms and records

Data Analysis and Display
- Interpret charts and tables
- Interpret graphs
- Construct graphs

Plot the following information on the graphs provided.

- All cattle and calves

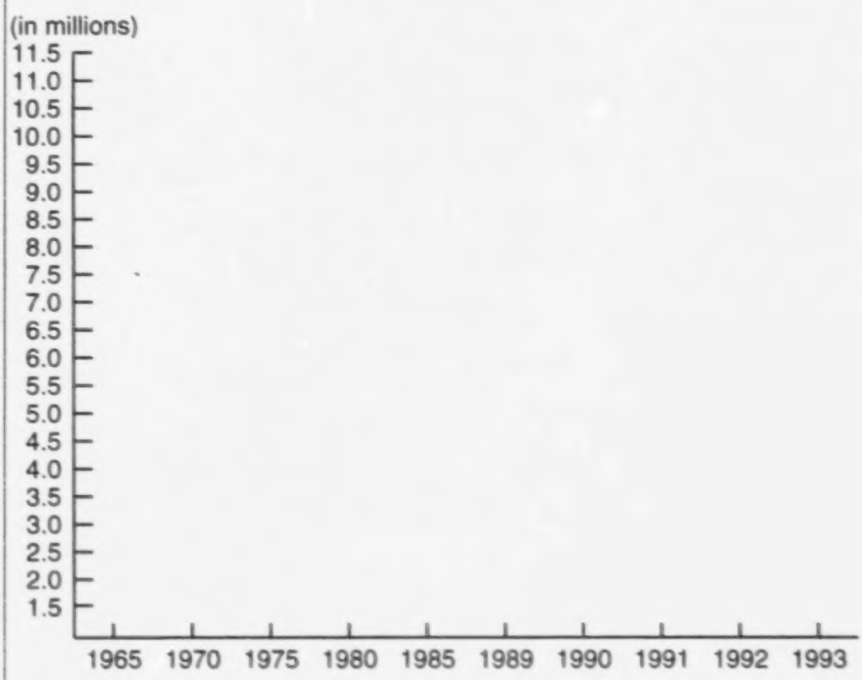
Year	Dollar Values	Year	Dollar Values
1965	422,144,000	1989	2,752,250,000
1970	772,675,000	1990	2,677,500,000
1975	845,000,000	1991	3,052,500,000
1980	2,447,500,000	1992	3,024,000,000
1985	1,696,000,000	1993	3,051,000,000



Cognitive Activities
- Collect/record information
- Draw conclusions

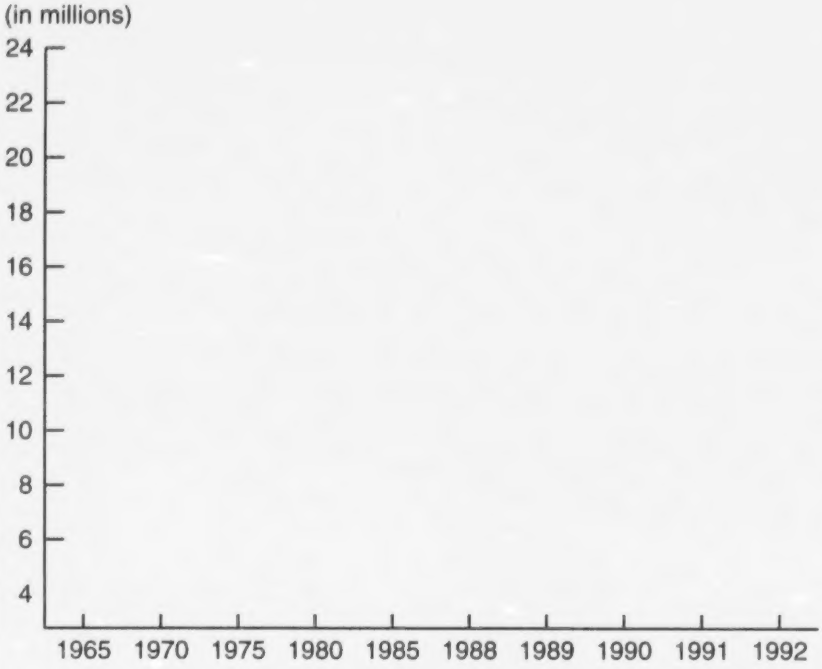
- All sheep and lambs

Year	Dollar Values	Year	Dollar Values
1965	1,573,000	1989	11,492,000
1970	2,340,000	1990	8,568,000
1975	2,359,000	1991	7,155,000
1980	6,836,000	1992	8,410,000
1985	5,568,000	1993	7,935,000



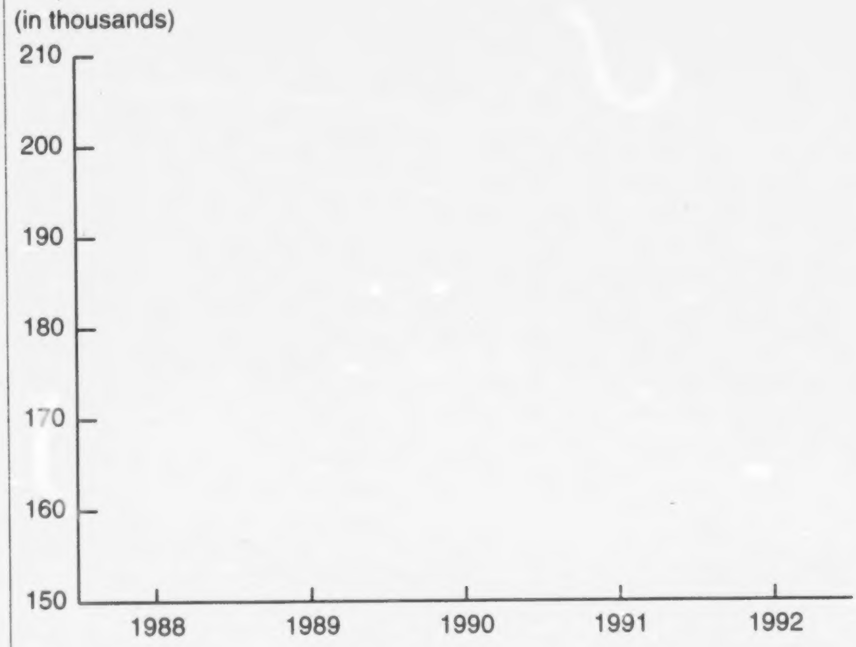
- All hogs and pigs

Year	Dollar Values	Year	Dollar Values
1965	4,608,000	1988	16,200,000
1970	9,945,000	1989	18,170,000
1975	21,450,000	1990	18,490,000
1980	20,125,000	1991	15,200,000
1985	13,300,000	1992	18,720,000



- Broilers

Year	Dollar Values
1988	$155,598
1989	197,584
1990	181,021
1991	189,453
1992	203,878



Use information from the Assignment Sheets to answer the following questions.

1. In 1990, Oklahoma farmers received $2,677,500,000 for their cattle. Was inventory up or down from the previous year?

   ____

2. Were prices considered to be up or down? ______________

3. In 1993 Oklahoma farmers received $7,935,000 for their lambs. Was inventory up or down from the previous year?

   ____

4. Were prices considered to be up or down? ______________

5. In 1992 Oklahoma farmers received $18,720,000 for their hogs. Was inventory up or down from the previous year?

   ____

6. Were prices considered to be up or down? ______________

7. How are the prices that farmers received affected by livestock inventory?

   ____

   ____

   ____

Use the current edition of the *Oklahoma Agricultural Statistics* to answer the following questions.

8. How does livestock production in your county rank with that in other counties?

   a. Sheep ______________________________

   b. Cattle ______________________________

   c. Dairy ______________________________

   d. Hogs ______________________________

   e. All cattle and calves ______________________________

   f. Broilers ______________________________

9. How many head of livestock were recorded in your county as of January 1, 19__?

   a. All cattle and calves ______________________________
   b. Beef cows ______________________________
   c. Milk cows ______________________________
   d. All sheep and lambs ______________________________
   e. All hogs and pigs ______________________________
   f. Broilers ______________________________

10. Select an enterprise that is important in your county. Discuss why you think it is important and why you think other enterprises are less important. Support your opinion.

____

____

____

____

____

____

____

____

____

____

OBJECTIVE SHEET

BEEF BREEDS AND SELECTION

D2

INTRODUCTION

The Oklahoma beef cattle production industry contributes over $1.5 billion to the state's economy annually. In 1992, beef cattle ranked first when compared to all other agricultural commodities. As a producer of beef cattle, your income will depend on your ability to identify cattle breeds and select quality animals.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Read *Meat Trends Consumption, Prices, and Production Costs*, by Clement E. Ward and James N. Trapp, OSU Fact Sheet No. 488.
WRITING:	Write a one to two page essay about the handout. Compare the differences between the consumption, retail price trends, and the production cost trends for each of the meats listed. Using the comparisons, pick the meat you think you would like to raise and tell why.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Identify major breeds of beef cattle.
2. Label the parts of a beef animal.
3. List factors to consider in selecting show animals.
4. List indicators of muscling.
5. List indicators of finish.
6. Label types of defective front and hind legs.
7. Select from a list characteristics of the ideal market steer.
8. List desirable characteristics of a cow.
9. List desirable characteristics of a bull.
10. Label wholesale cuts of beef with their proper names and desired percentages of total carcass yield.
11. Define livestock judging.
12. Match to their correct definitions terms associated with livestock judging.
13. Distinguish between selected beef-judging terms for desirable and undesirable traits.
14. State the purpose of the FFA placing card.
15. List steps involved in computing placing scores.
16. Compute placing scores. (Assignment Sheet 1)
17. State the purpose of giving reasons for placings.
18. Evaluate sets of written reasons for placing classes of beef cattle. (Assignment Sheet 2)
19. Arrange in order steps to follow in taking notes for oral reasons for placings.
20. Select from a list techniques for presenting oral reasons for placings.
21. Arrange in order steps to follow in presenting oral reasons for placings.
22. Evaluate characteristics of a cow. (Assignment Sheet 3)

23. Evaluate characteristics of a bull. (Assignment Sheet 4)

24. Evaluate market steers. (Assignment Sheet 5)

25. Judge a breeding class of beef cattle. (Assignment Sheet 6)

26. Judge a market class of steers. (Assignment Sheet 7)

27. Write sets of reasons for placing classes of beef cattle. (Assignment Sheet 8)

28. Give a set of oral reasons for placing a class of beef cattle. (Assignment Sheet 9)

29. Use resource materials to locate information about beef cattle breeds. (Assignment Sheet 10)

BEEF BREEDS AND SELECTION

OBJECTIVE 1

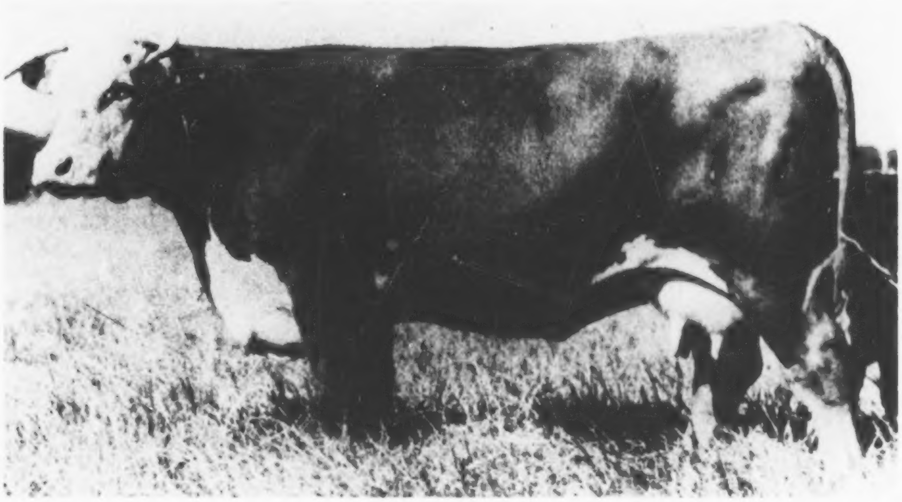
Optional Activities/
Resources in
Instructor's Guide

Identify major breeds of beef cattle.

WORDS YOU SHOULD KNOW	
breed	group of animals having a common origin and characteristics that distinguish it from other groups within the same species
breeder	owner of the dam at time of service
polled	naturally hornless
purebred	animal of a recognized breed that is eligible for registry in the official herdbook of that animal

- Horned Hereford

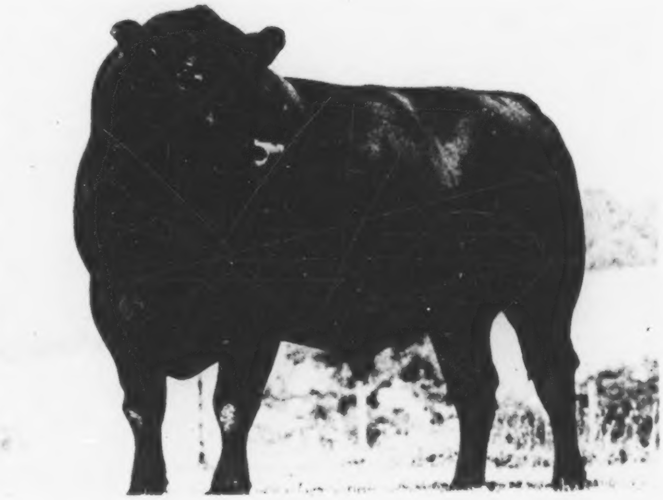
FIGURE 1



Courtesy: American Hereford Association, Kansas City, Missouri.

- Angus

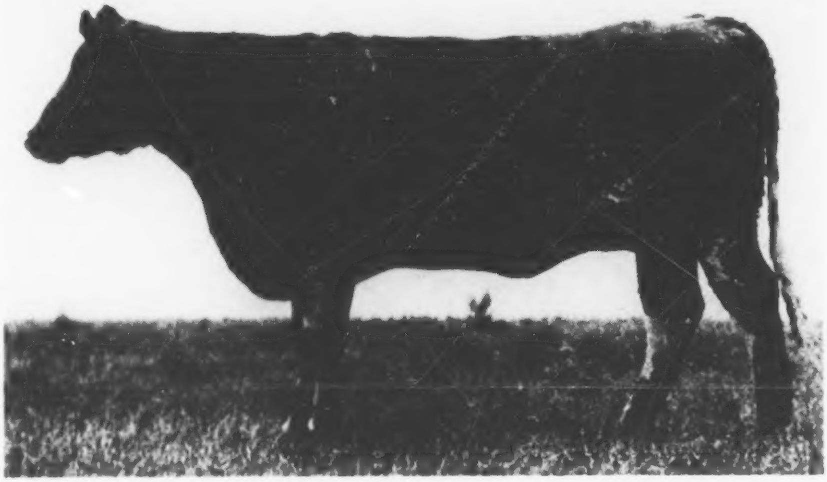
FIGURE 2



Courtesy: American Angus Association, St. Joseph, Missouri.

- Shorthorn

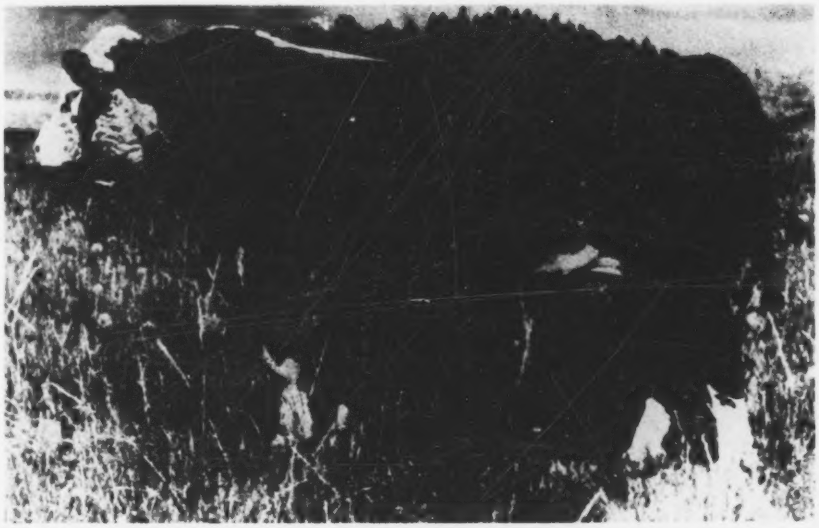
FIGURE 3



Courtesy: American Shorthorn Association, Omaha, Nebraska.

- Polled Hereford

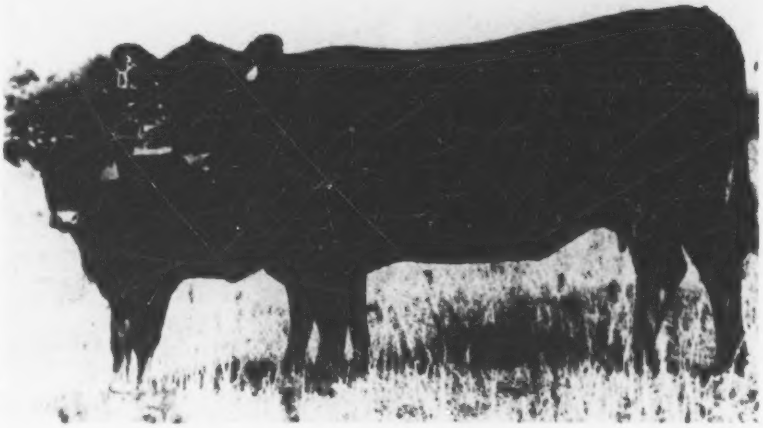
FIGURE 4



Courtesy: American Polled Hereford Association, Kansas City, Missouri.

- Red Angus

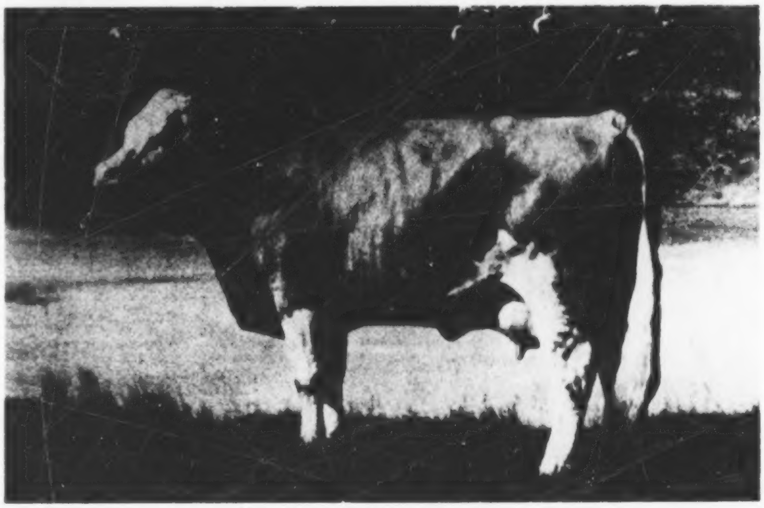
FIGURE 5



Courtesy: Red Angus Association of America, Denton, Texas.

- Simmental

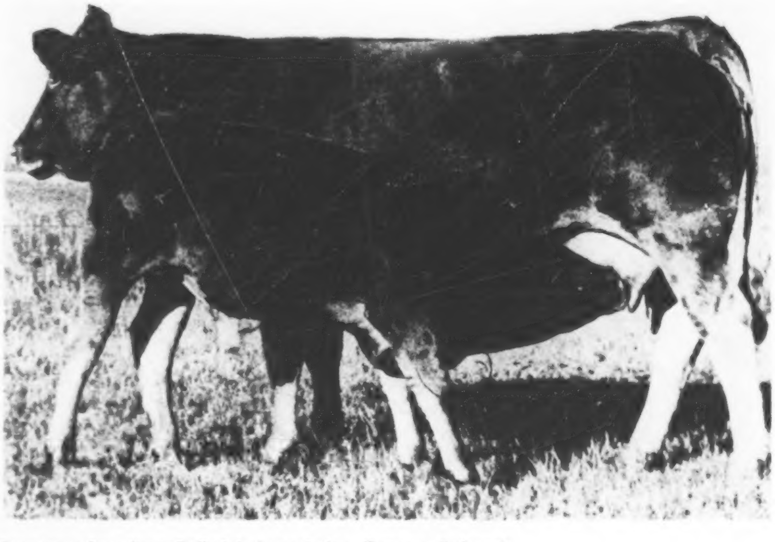
FIGURE 6



Courtesy: American Simmental Association, Inc., Bozeman, Montana.

- Gelbvieh

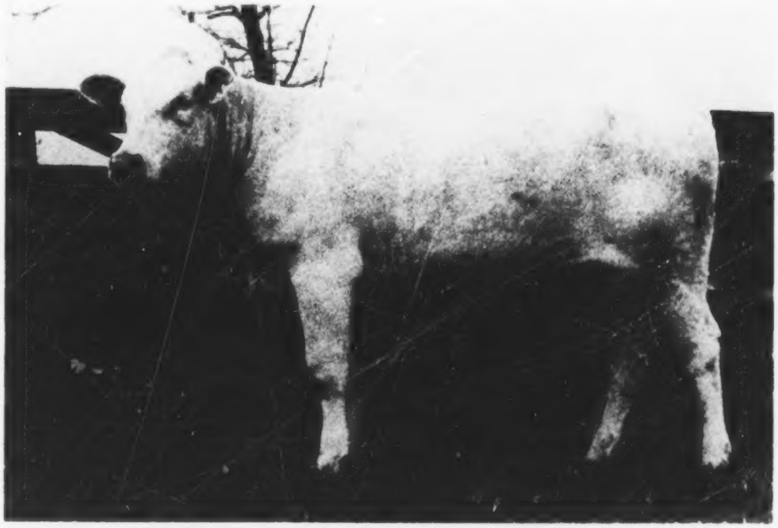
FIGURE 7



Courtesy: American Gelbvieh Association, Denver, Colorado.

- Charolais

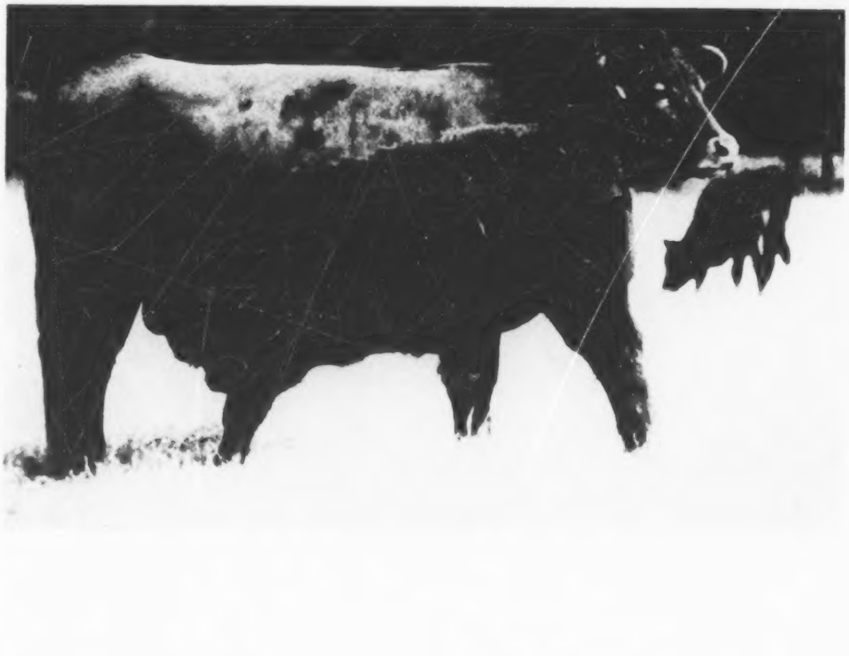
FIGURE 8



Courtesy: American Charolais Association, Kansas City, Missouri.

- Limousin

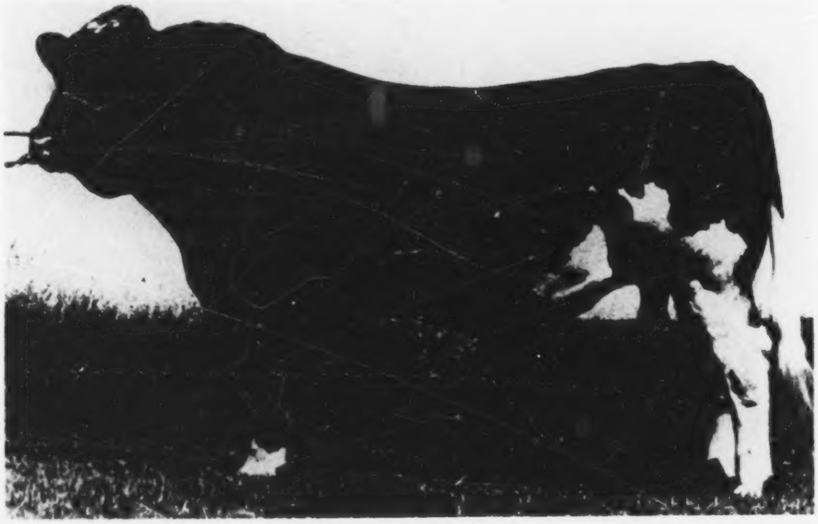
FIGURE 9



Courtesy: North American Limousin Foundation, Denver, Colorado.

- Maine-Anjou

FIGURE 10



Courtesy: American Maine-Anjou Association, Kansas City, Missouri.

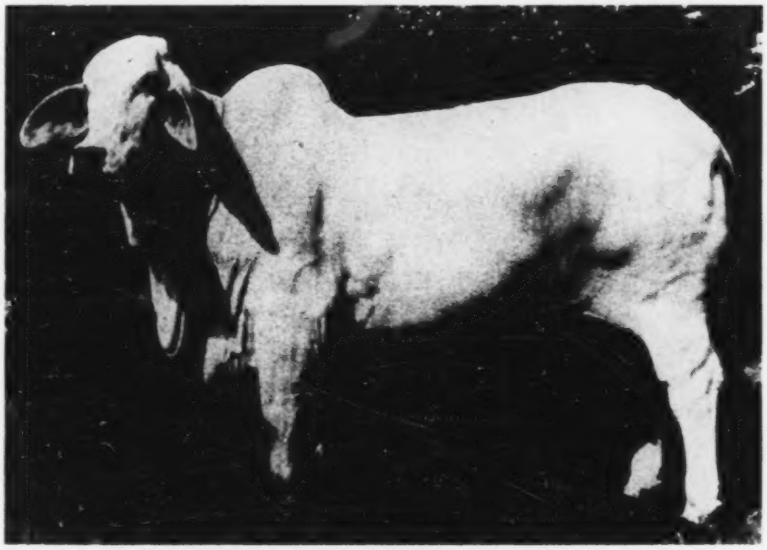
- Chianina

FIGURE 11

Courtesy: American Chianina Association, Platte City, Missouri.

- Brahman

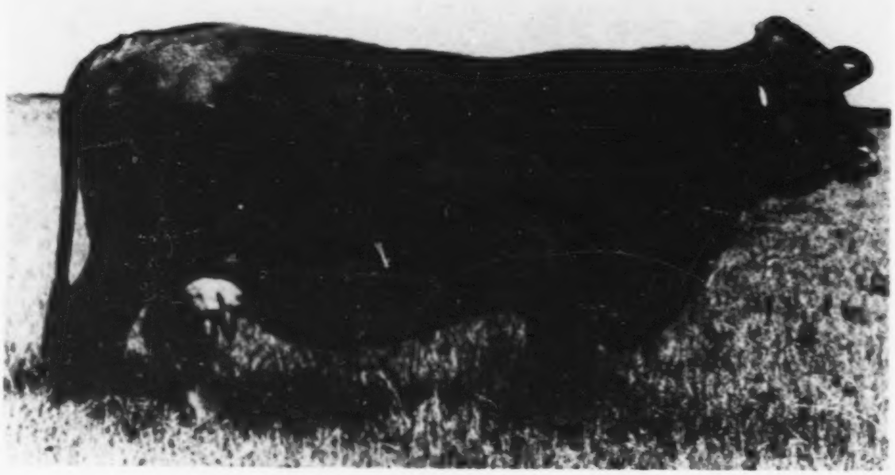
FIGURE 12



Courtesy: American Brahman Breeders Association, Houston, Texas.

- Santa Gertrudis

FIGURE 13



Courtesy: American Santa Gertrudis Breeders International, Kingsville, Texas.

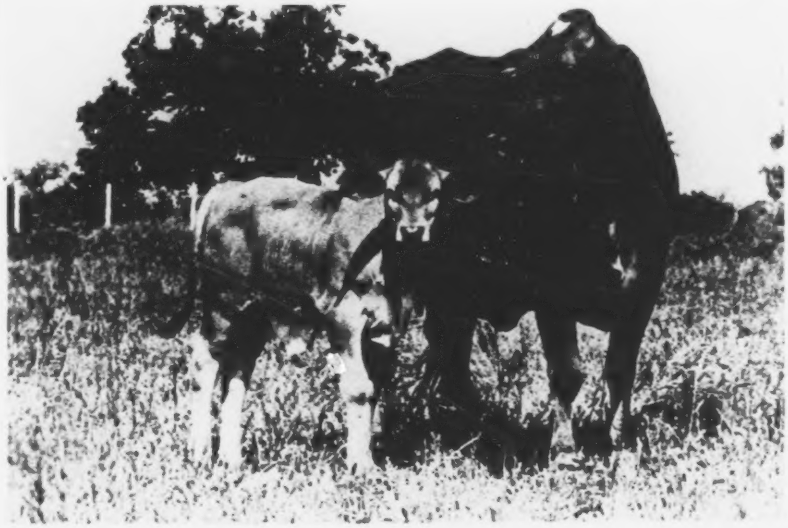
- Brangus

FIGURE 14

Courtesy: International Brangus Breeders Association, Inc., San Antonio, Texas.

- Beefmaster

FIGURE 15



Courtesy: Beefmaster Breeders Universal, San Antonio, Texas.

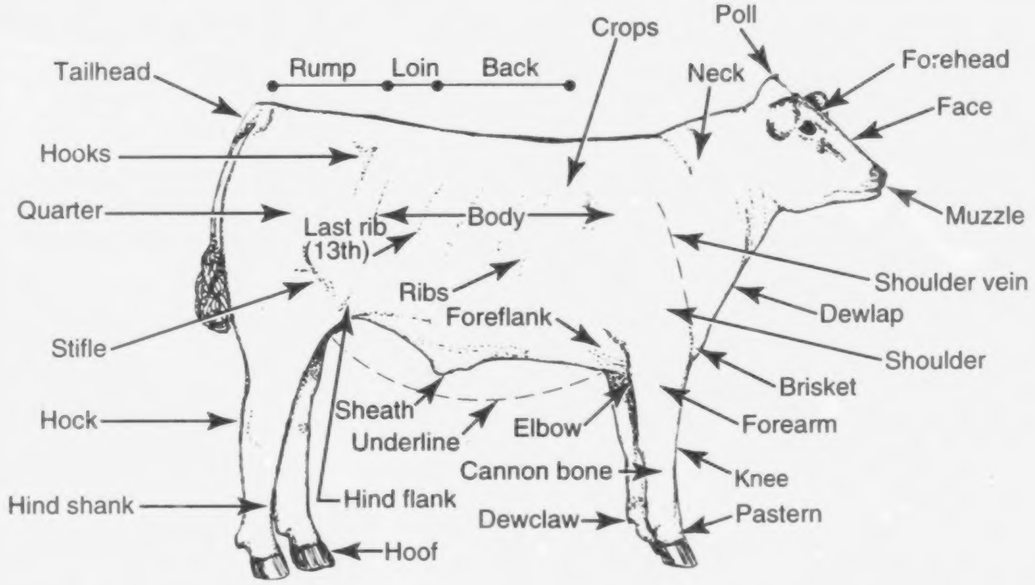
OBJECTIVE 2

Required Activities/
Resources
- Transparency Master 1

Label the parts of a beef animal.

You will see a transparency showing the parts of a beef animal.

FIGURE 17


Crops
Poll
Forehead
Tailhead
Rump
Loin
Back
Neck
Face
Hooks
Muzzle
Quarter
Last rib (13th)
Body
Shoulder vein
Ribs
Foreflank
Dewlap
Stifle
Shoulder
Brisket
Sheath
Hock
Underline
Elbow
Forearm
Cannon bone
Knee
Hind shank
Hind flank
Dewclaw
Pastern
Hoof

OBJECTIVE 3

Required Activities/
Resources
- Discussion

Optional Activities/
Resources in
Instructor's Guide

List factors to consider in selecting show animals.

Discuss the question "Why are performance and breeding records important?"

- Type
- Breeding and performance
- Show classification

OBJECTIVE 4

Required Activities/
Resources
- Transparency Master 2
- Discussion

Optional Activities/
Resources in
Instructor's Guide

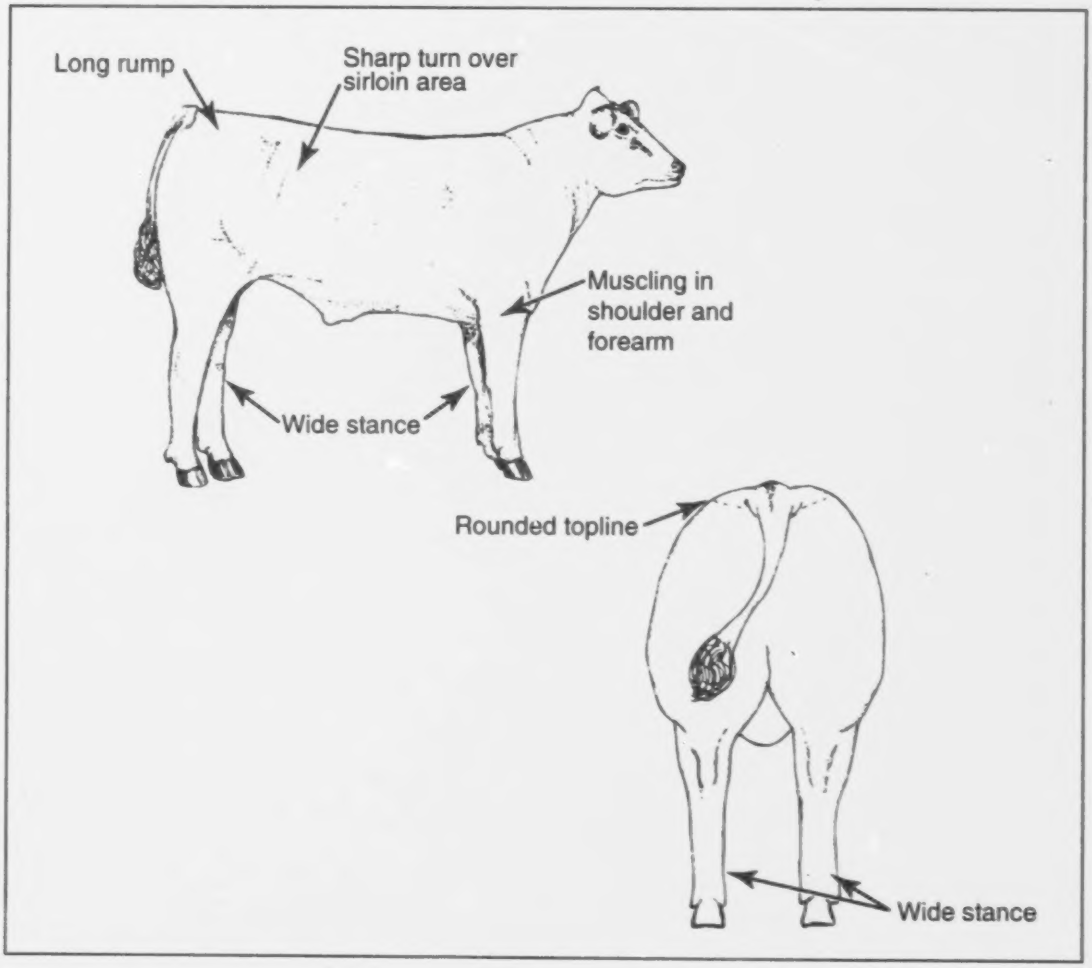
List indicators of muscling.

You will see a transparency showing the muscling of a beef animal.

Discuss the reasons why good muscling is necessary.

- Long rump
- Sharp turn over sirloin area
- Muscling in shoulder and forearm
- Wide stance in front and rear
- Rounded topline

FIGURE 18


Long rump
Sharp turn over sirloin area
Muscling in shoulder and forearm
Wide stance
Rounded topline
Wide stance

OBJECTIVE 5

Required Activities/
Resources
- Transparency Master 3
- Discussion

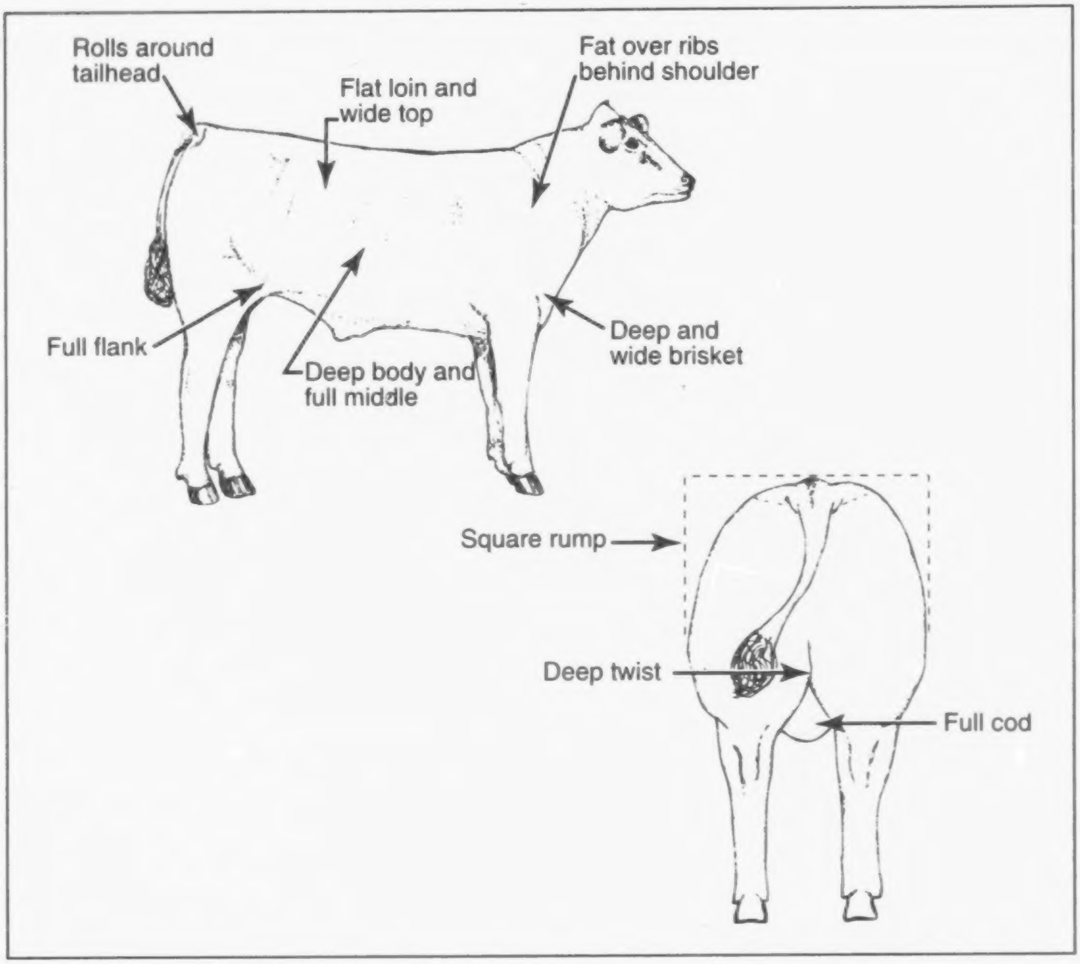
List indicators of finish.

You will see a transparency showing the proper finish of a beef animal.

Discuss the effects of weight, muscle and fat composition, and marbling on a market animal.

- Rolls around tailhead
- Flat loin and wide top
- Fat over ribs behind shoulder
- Deep body and full middle
- Deep and wide brisket
- Full flank
- Square rump
- Deep twist
- Full cod

FIGURE 19


Rolls around tailhead
Flat loin and wide top
Fat over ribs behind shoulder
Full flank
Deep body and full middle
Deep and wide brisket
Square rump
Deep twist
Full cod

OBJECTIVE 6

Required Activities/ Resources
- Transparency Masters 4 & 5

Optional Activities/ Resources in Instructor's Guide

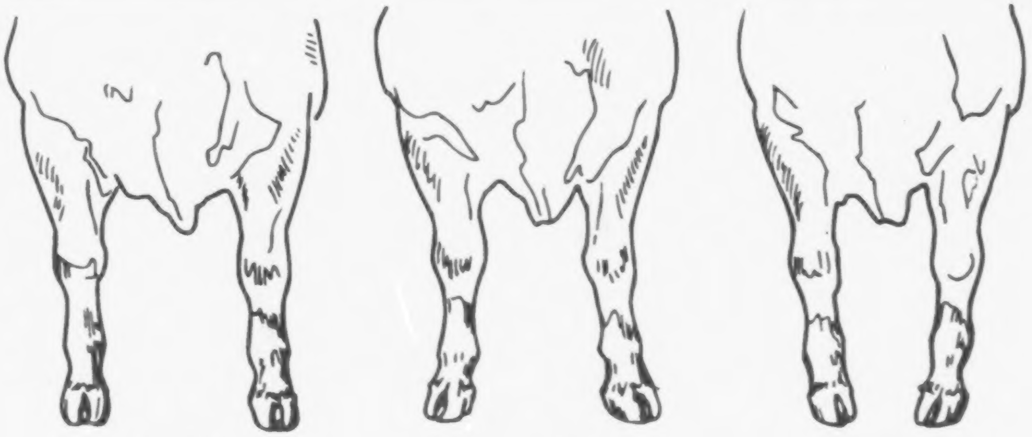
Label types of defective front and hind legs.

You will see transparencies showing the types of defective front and hind legs on a beef animal.

☑ **NOTE:** An animal must have structurally correct legs if it is to be profitable, particularly if it is to be used for breeding. It should stand on ample legs that are correctly placed under its body.

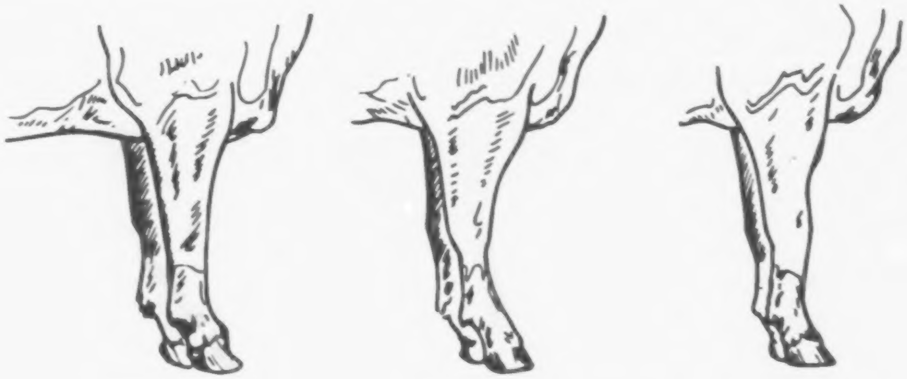
- Front legs

FIGURE 20



Correct Splay-footed Toed-in

FIGURE 21



Correct Calf-kneed Buck-kneed

Figures 20 and 21 used with permission of Texas Vocational Instructional Services.

- Hind legs

FIGURE 22

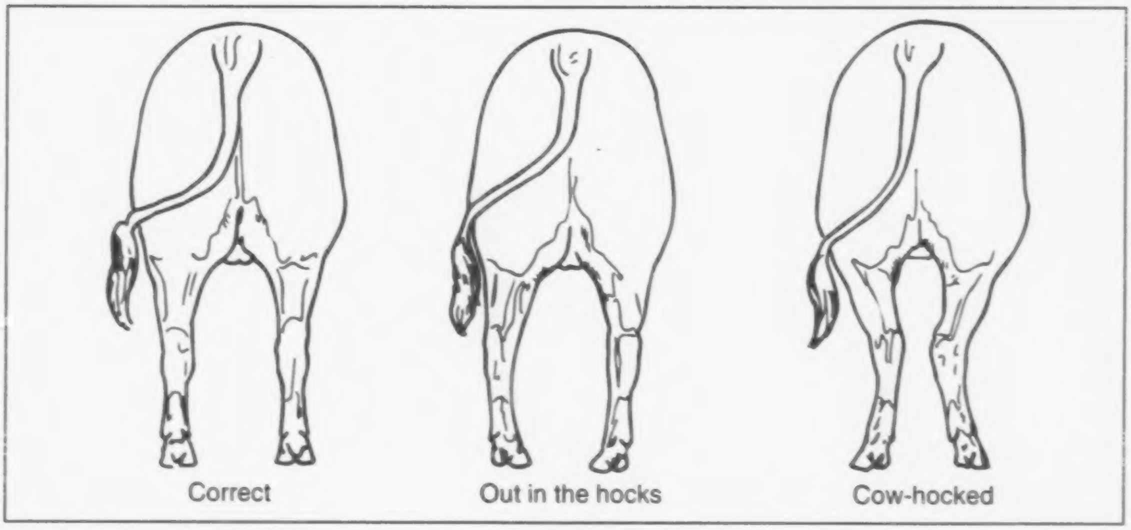
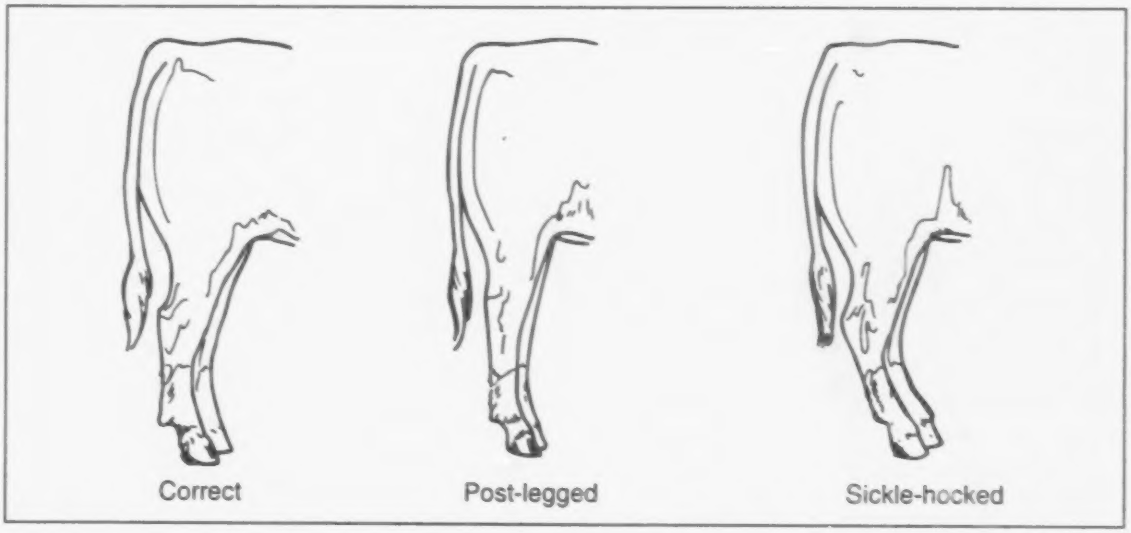

Correct
Out in the hocks
Cow-hocked

FIGURE 23


Correct
Post-legged
Sickle-hocked

Figures 22 and 23 used with permission of Texas Vocational Instructional Services.

OBJECTIVE 7

Required Activities/
Resources
- Transparency Master 6
- Discussion

Optional Activities/
Resources in
Instructor's Guide

Select from a list characteristics of the ideal market steer.

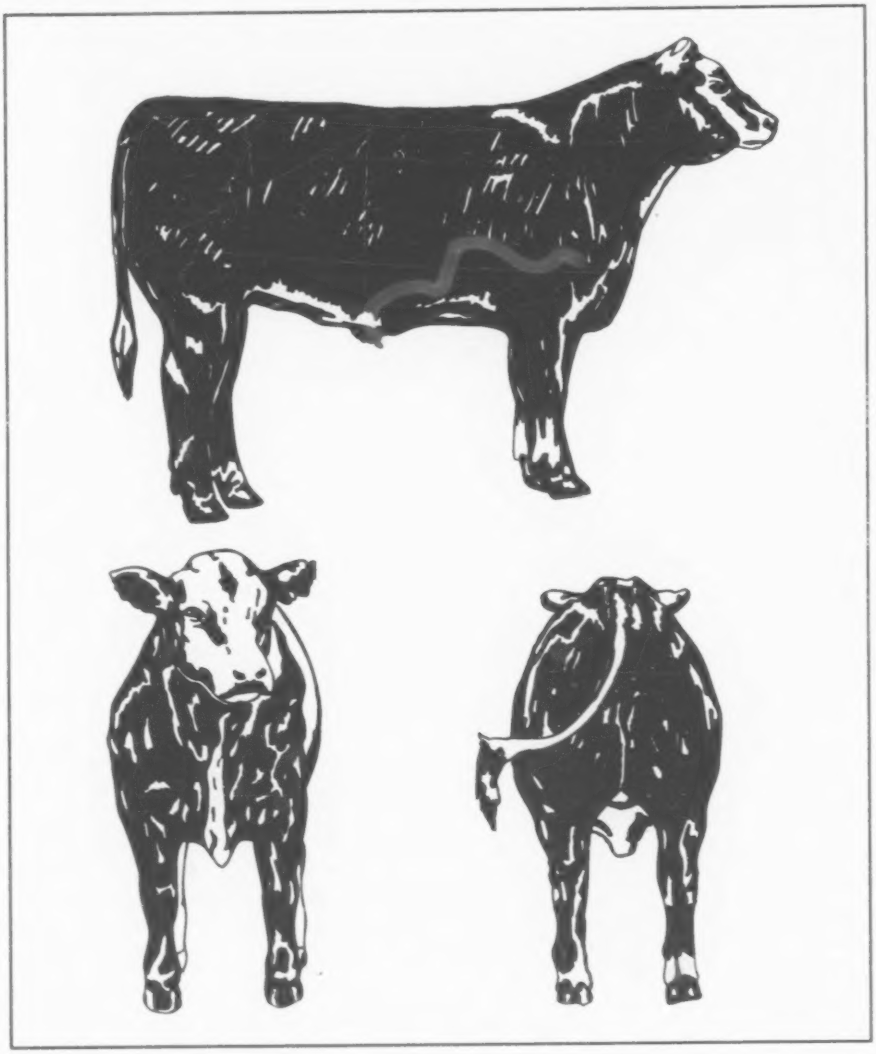
You will see a transparency showing the characteristics of a market steer.

Discuss the question "What are the costs of feeding an animal with good conversion versus one with poor conversion?"

WORDS YOU SHOULD KNOW	
steer	male beef animal castrated at an early age

- Maximum age – eighteen months
- Minimum weight (normal fill) – 1,100 pounds
- Maximum weight (normal fill) – 1,300 pounds
- Desired average daily gain (120 days) – 3 pounds per day
- Minimum average daily gain (120 days) – 2 pounds per day
- Minimum hip height – 52 inches
- Maximum hip height – 55 inches
- Minimum fat cover at twelfth rib – 0.3 inches
- Maximum fat cover at twelfth rib – 0.5 inches
- Desired rib eye area – 2 square inches per 100 pounds carcass weight
- Maximum yield grade – 2.9
- Minimum quality grade – Good +

FIGURE 24



Used with permission of the Idaho State Board for Vocational Education.

OBJECTIVE 8

Required Activities/
Resources
– Transparency Master 7

Optional Activities/
Resources in
Instructor's Guide

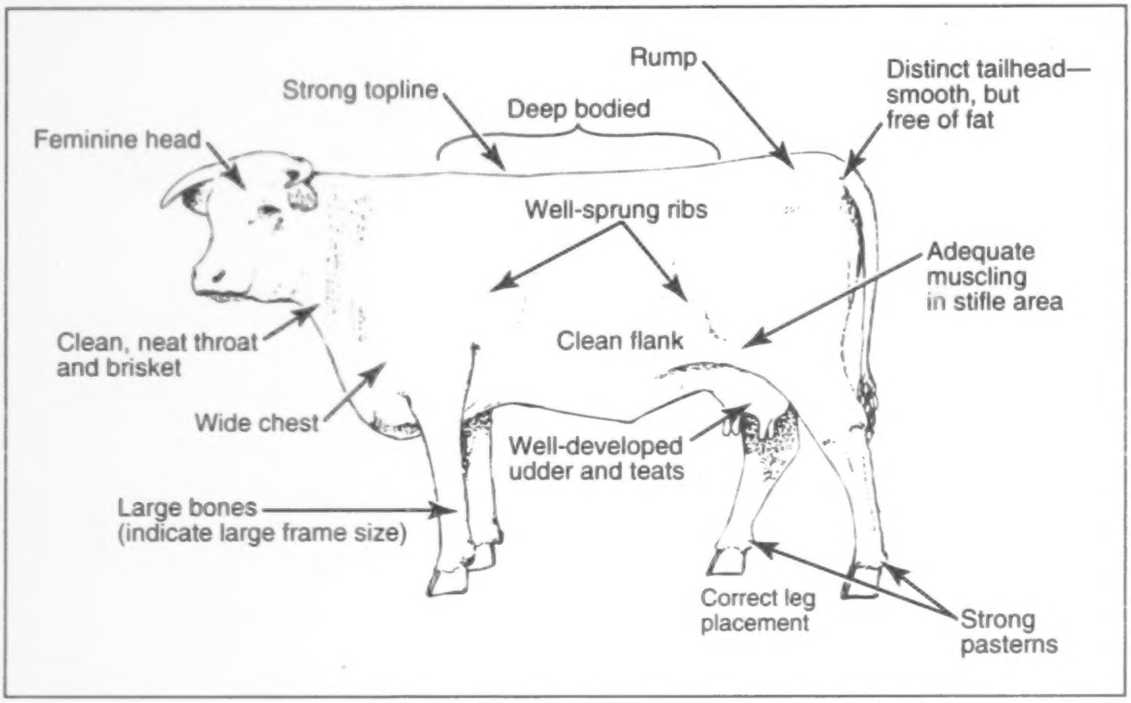
List desirable characteristics of a cow.

You will see a transparency showing the desirable characteristics of a cow.

WORDS YOU SHOULD KNOW	
cow	mature female beef animal
dam	female parent
heifer	bovine female that has not borne a calf

- Feminine head
- Clean, neat throat and brisket
- Wide chest
- Large bones
- Deep bodied
- Strong topline
- Long rump
- Distinct tailhead that is smooth but free of fat
- Adequate muscling in stifle area
- Correct leg placement
- Strong pasterns
- Well-developed udder and teats
- Clean flank

FIGURE 25


Rump
Strong topline
Deep bodied
Distinct tailhead—smooth, but free of fat
Feminine head
Well-sprung ribs
Adequate muscling in stifle area
Clean, neat throat and brisket
Clean flank
Wide chest
Well-developed udder and teats
Large bones (indicate large frame size)
Correct leg placement
Strong pasterns

OBJECTIVE 9

Required Activities/ Resources
- Transparency Master 8

Optional Activities/ Resources in Instructor's Guide

List desirable characteristics of a bull.

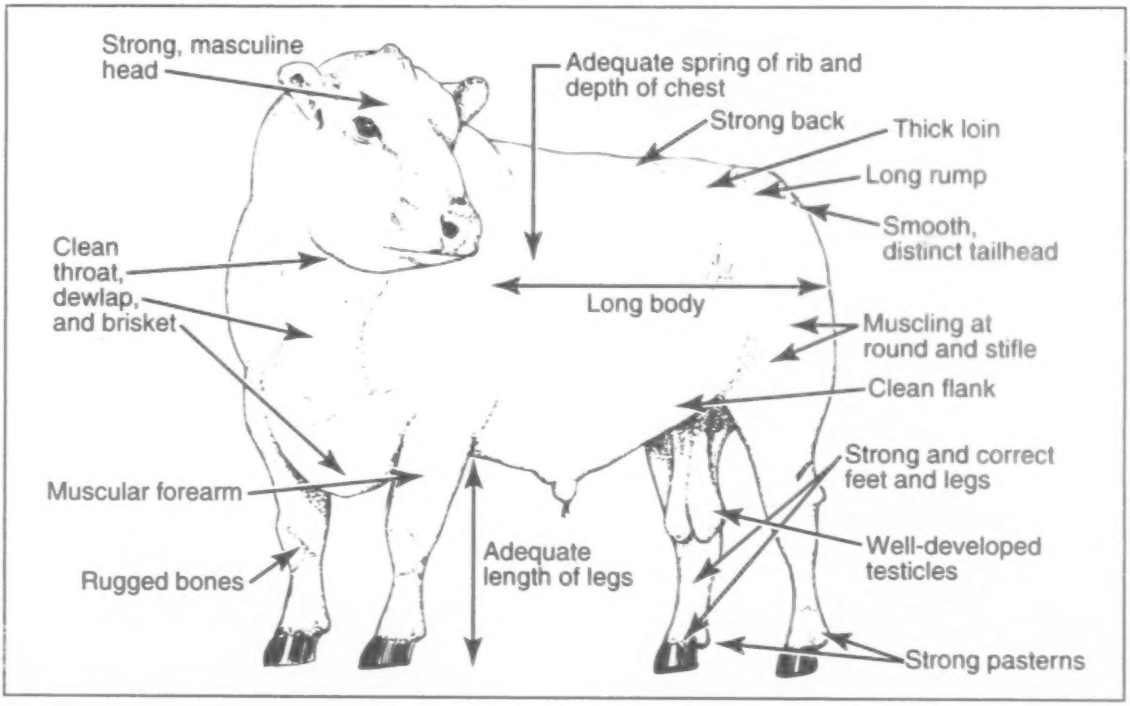
You will see a transparency showing the desirable characteristics of a bull.

WORDS YOU SHOULD KNOW	
bull	uncastrated male beef animal
sire	male parent

- Strong, masculine head
- Clean throat, dewlap, and brisket
- Muscular forearm
- Rugged bones

- Clean flank
- Well-developed testicles
- Strong pastern
- Strong and correct feet and legs
- Muscling at round and stifle
- Smooth, distinct tailhead
- Long rump
- Thick loin
- Strong back
- Adequate spring of rib and depth of chest
- Well-developed chest
- Long body

FIGURE 26


Strong, masculine head
Adequate spring of rib and depth of chest
Strong back
Thick loin
Long rump
Smooth, distinct tailhead
Clean throat, dewlap, and brisket
Long body
Muscling at round and stifle
Clean flank
Strong and correct feet and legs
Muscular forearm
Well-developed testicles
Adequate length of legs
Rugged bones
Strong pasterns

OBJECTIVE 10

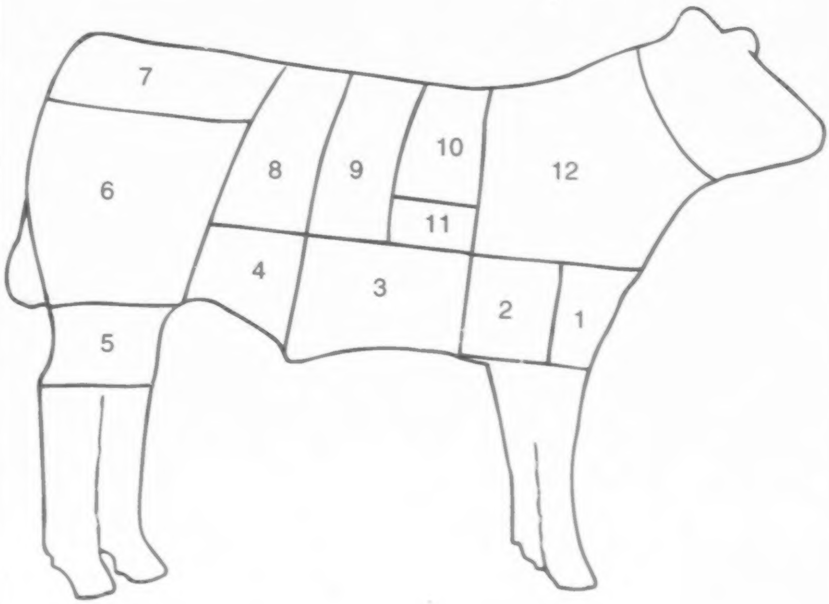
Required Activities/
Resources
- Transparency Master 9

Optional Activities/
Resources in
Instructor's Guide

Label wholesale cuts of beef with their proper names and desired percentages of total carcass yield.

You will see a transparency showing the cuts of beef.

FIGURE 27



1 — Brisket: 6%
2 — Foreshank: 4%
3 — Plate: 5.5%
4 — Flank: 4%
5 — Hind Shank: 3%
6 — Round: 21%
7 — Rump: 3%
8 — Sirloin: 9%
9 — Short Loin: 8%
10— Rib: 8%
11— Short Ribs: 1.5%
12— Chuck: 26%

Used with permission of Jarold Callahan, Instructor, Animal Science, Oklahoma State University.

OBJECTIVE 11

Optional Activities/
Resources in
Instructor's Guide

Define livestock judging.

- **livestock judging** – process of carefully analyzing an animal's individual traits and comparing those traits to an ideal animal or standard

  ☑ **NOTE:** In a livestock judging contest, there are four animals in a class. The judge analyzes each of the four animals individually, and then compares each animal to other animals in the class.

OBJECTIVE 12

Optional Activities/
Resources in
Instructor's Guide

Match to their correct definitions terms associated with livestock judging.

- **average daily gain** – average weight change of an animal during a twenty-four hour feeding or grazing period, measured in pounds
- **broodiness** – combination of characteristics indicating that female probably will be a good mother
- **carcass cutability** – estimate of the percentage of trimmed boneless retail cuts from the round, loin, rib, and chuck
- **carcass evaluation** – technique of measuring components of quality and quantity of carcasses
- **carcass merit** – desirability of a carcass relative to quantity and quality of edible portion
- **conformation** – animal's overall structure as compared to an ideal
- **femininity** – traits distinguishing a female from a male
- **grant** – recognition that an animal has desirable traits but that these traits are not acceptable to be used any higher in class
- **growthiness** – condition of having appropriate size and weight for age
- **marbling** – intramuscular fat
- **masculinity** – traits distinguishing a male from a female

- **quality** – overall smoothness, blending of shoulders, and refinement of head and bone

- **ruggedness** – masculine quality of having large bones and frame

- **scale** – size of animal as determined by skeletal structure

- **size** – correct skeletal frame and weight for age

- **soundness** – quality of being correct on the feet and legs, used primarily with breeding stock

- **structure** – fixed pattern

  EXAMPLE: straight, strong top; correct placement of feet and legs

- **substance** – muscle and bone

- **trimness** – freedom from excess finish or fat

OBJECTIVE 13

Distinguish between selected beef-judging terms for desirable and undesirable traits.

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Discuss the question "Why are some traits classified desirable and other traits are classified undesirable?"

STEERS

AREA	DESIRABLE	UNDESIRABLE
General	Nicer-balanced Heavier-muscled, meatier Trimmer, more correctly finished Thicker, wider, beefier Larger, longer-patterned, larger frame, more scale	Poorly balanced Light-muscled Fat, overfinished Narrow Low-set, short-bodied, less scale
Forequarter	Smoother-shouldered Cleaner-fronted Wider-chested More volume and capacity Heavier, more rugged Heavier-muscled through forearm	Coarse-shouldered Wasty front Narrow chest, front Tight-ribbed, flat-ribbed Refined Light-muscled forearm
Back, loin, and middle	Stronger-topped Thicker, wider-topped Trimmer middle	Weak-topped Narrow-topped Wasty, heavy middle
Hindquarter	Thicker, wider-rumped Longer, leveler-rumped Longer from hooks to pins Free of fat around tailhead More muscular quarter More shape and dimension to quarter More bulging stifle Wider-standing	Narrow-rumped Droopy-rumped Short-rumped Patchy around tailhead Narrow-quartered Flat-quartered Flat-stifled Narrow-standing
Finish	Firmer-finished Firmer, harder handling More uniformly finished More desirably finished	Soft-finished Soft-handling Patchily finished Overfinished; bare in its finish
Carcass	Thicker, more heavily muscled carcass, would yield a thicker, meatier carcass Would yield a carcass with a higher percent of trimmed retail cuts Would yield a trimmer, more desirable finished carcass with less fat trim Higher-yielding, higher-grading carcass A heavier-muscled, higher-grading carcass due to its advantage in muscle and finish A higher-cutability carcass	A less trim carcass with a higher ratio of fat to lean Should yield a poorly finished carcass that is less apt to grade "choice" An excessively finished steer that should yield the lowest yield A lower-cutability carcass

BREEDING CATTLE

AREA	DESIRABLE	UNDESIRABLE
General	Meatier, heavier-muscled	Narrow, light-muscled
	To size and scale	Small-framed
	Nicely balanced	Poorly balanced
	More substance of bone	Light-boned
	Higher quality	Low quality
	More stylish	Off type
	Larger, growthier	Small, early-maturing
Head, neck and chest	More feminine	Lacks femininity
	Typier-fronted	Coarse-fronted
	More youthful-appearing head	Shows a lot of age about head
	More masculine (bulls)	Plain-headed
	Wider and deeper-chested	Weak-headed
	More rugged (bulls)	Narrow-chested
	More powerfully fronted	Refined
Shoulder and middle	Smooth-shouldered	Course shouldered
	Wide-topped	Narrow-topped
	Stronger, straighter back	Weak-topped
	Greater spring of rib	Tight-chested
	Wider over back and loin	Narrow-loined
	Deeper-ribbed or -hearted	Shallow-chested
	Trimmer middle	Wasty middle
	Heavier-muscled down top	Lighter-muscled down top
Hindquarter	Heavier muscled quarter	Light muscled quarter
	Bulge to quarter	Flat quarter
	Dimension to quarter	Narrow quarter
	Thicker rump	Narrow rump
	Squarer rump	Droopy rump
	Leveler from hooks to pins	Tapers hooks to pins
	Longer-rumped	Shorter-rumped
	Higher at pins	Low at pins, slopes from hooks to pins
	Smoother tailhead	Rough tailhead
Feet and legs	Stands on more bone	Fine-boned
	More rugged substance of bone	Light-boned
	Stands more correctly on feet and legs	Pigeon-toed; buck-kneed; splay-footed
	More correct set of hocks	Post-legged; cow-hocked; sickle-hocked
	Stands wider in front and rear	Narrow-standing
	Stronger pasterns	Weak pasterns
Movement	More correct-moving	Walks under behind; rolls in front
	Straighter-traveling	Moves close in front and behind
	Freer-moving	Sluggish-moving

OBJECTIVE 14

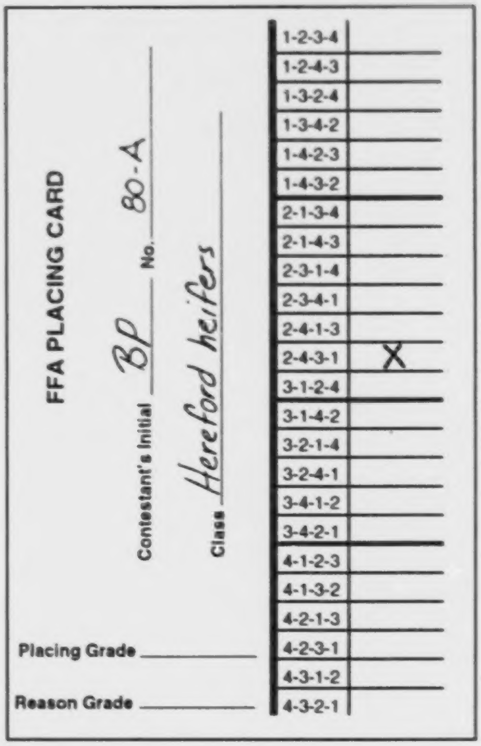
Optional Activities/ Resources in Instructor's Guide

State the purpose of the FFA placing card.

- Identify the judge
- Record the placing
- Relate to officials how the class was placed

☑ **NOTE:** Fill out the card in pencil, and write clearly. An incorrectly written card can cause a team to lose a contest.

FIGURE 28



FFA PLACING CARD

Contestant's Initial BP No. 80-A

Class Hereford heifers

Placing Grade ____________

Reason Grade ____________

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	X
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

OBJECTIVE 15

Optional Activities/ Resources in Instructor's Guide

List steps involved in computing placing scores.

☑ **NOTE:** There are always four animals in a livestock class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.

1. Compare your placings to official placings.

EXAMPLE:

Official Placings	Your placings
3 - 4 - 2 - 1 2 5 4 (cuts)	1 - 2 - 3 - 4

2. Write your placings as pairs.

EXAMPLE: 1/2 2/3 3/4

1/3 2/4

1/4

3. Use cuts to calculate points.

   a. Compare each pair you placed to the corresponding pair in the official placing.

   b. Count zero points for each matching pair.

   c. Count points for pairs that do not match by adding cuts that fall between the paired numbers.

   d. Total the points for all pairs.

   EXAMPLE:

Official Placings	Your placings
3 - 4 - 2 - 1 2 5 4 (cuts)	1 - 2 - 3 - 4

   1/2 = 4 points 2/3 = 2 + 5 = 7 points 3/4 = 0 points

   1/3 = 2 + 5 + 4 = 11 points 2/4 = 5 points

   1/4 = 5 + 4 = 9 points

   Total of points = 4 + 11 + 9 + 7 + 5 = 36

4. Subtract total points from 50 to find placing score.

EXAMPLE: Subtract 36 points from 50 points = 14 points

Your score = 14

☞ **NOTE:** If the class had placed 4 - 3 - 2 - 1, there would have been a top switch, which would have cost two points, making your score 48 points. If 2 and 3 had been switched, it would have cost 5 points, making your score 45 points.

OBJECTIVE 16

Complete Assignment Sheet 1.

OBJECTIVE 17

Optional Activities/
Resources in
Instructor's Guide

State the purpose of giving reasons for placings.

- To present your opinion and justification for placing a class of livestock

OBJECTIVE 18

Complete Assignment Sheet 2.

OBJECTIVE 19

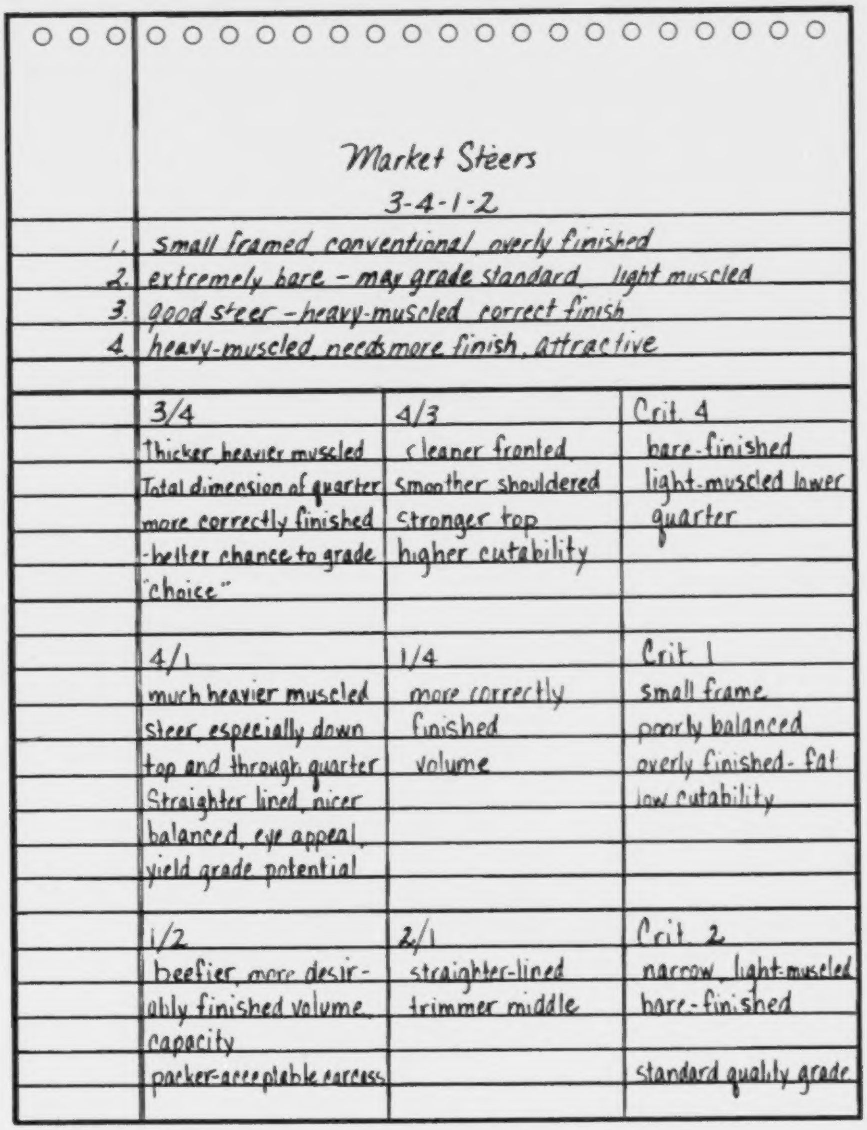
Optional Activities/
Resources in
Instructor's Guide

Arrange in order steps to follow in taking notes for oral reasons for placings.

1. Identify the class.
2. Write your placings at the top of the page.
3. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers.
4. Take notes on each animal to identify strong points and criticisms of each.
5. Take notes by pairs giving advantages as well as grants.

☑ **NOTE:** It is important to learn to take good notes in preparation for giving oral reasons for your placings. You may judge several classes in a day and give the reasons for your placings at a later time. By taking good notes, you can develop a good set of reasons. Write your notes in a 6-by-9-inch stenographer's spiral notebook, and use a pencil.

FIGURE 29



Market Steers

3-4-1-2

1. small framed, conventional, overly finished
2. extremely bare - may grade standard, light muscled
3. good steer - heavy-muscled, correct finish
4. heavy-muscled, needs more finish, attractive

3/4	4/3	Crit. 4
Thicker, heavier muscled	cleaner fronted,	bare-finished
Total dimension of quarter	smoother shouldered	light-muscled lower
more correctly finished	stronger top	quarter
-better chance to grade	higher cutability	
"choice"		
4/1	1/4	Crit. 1
much heavier muscled	more correctly	small frame
steer, especially down	finished	poorly balanced
top and through quarter	volume	overly finished - fat
Straighter lined, nicer		low cutability
balanced, eye appeal,		
yield grade potential		
1/2	2/1	Crit. 2
beefier, more desir-	straighter-lined	narrow, light-muscled
ably finished volume,	trimmer middle	bare-finished
capacity		
packer-acceptable carcass		standard quality grade

☑ **NOTE:** The following set of written reasons was developed from the notes given in Figure 29.

MARKET STEER REASONS

I prefer an alignment of 3 - 4 - 1 - 2 on this class of crossbred market steers.

I placed 3 first, as he was the stoutest-made, most powerfully constructed steer and best combined muscle and correctness of finish; however, if I could change 3, I would like to see him smoother-fronted.

Nonetheless, in my initial pair, 3 as compared to 4 was a thicker, heavier muscled steer that had more shape and natural bulge of muscle down his top with more total dimension of muscle to both rump and quarter. Likewise, 3 was a more correctly finished steer that had a greater degree of fat cover over his top and down over his ribs than 4. Therefore, due to 3's advantage in muscle and finish, he would yield a heavier-muscled carcass that should be more apt to grade "choice."

I will readily concede that 4 was a cleaner-fronted, smoother-shouldered steer that was stronger down his top and would yield a higher cutability carcass than 3. However, I faulted 4 and prefer to place him second as he was a bare, open-ribbed steer that needed more thickness to his lower quarter and stifle.

But, in regard to my intermediate pair, I liked 4's advantage of muscle and balance, as 4 was a thicker, wider-topped steer that had more thickness to his quarter than 1. Moreover, 4 was a straighter-lined, nicely balanced, more attractive-profiling steer than 1. Due to 4's advantage of muscle and trimness, he would yield a carcass with a lower numerical yield grade than 1.

One was a more correctly finished steer that had more depth of body and overall volume than 4. However, I criticize 1 and prefer him third as he was a small-framed, poorly balanced steer that would yield the lowest cutability carcass in the class.

Nevertheless, in my bottom pair, I easily placed 1 over 2 as 1 was a more industry-acceptable steer in that 1 was a thicker, beefier-topped steer and possessed a greater degree of finish. In addition, 1 was a deeper-ribbed, higher-volume steer that also had a greater amount of muscle mass. Not only was 1 carrying a greater degree of finish, but 1 would also yield a higher-quality grading carcass with more packer acceptability.

Realizing 2 was a straight-lined steer with a trim middle, I chose to place him last because he was a narrow-made, light-muscled, bare-finished steer that would yield the lightest muscled carcass with the least chance of grading "choice."

Written by Bob Kropp
Professor, Animal Science
Oklahoma State University

OBJECTIVE 20

Optional Activities/
Resources in
Instructor's Guide

Select from a list techniques for presenting oral reasons for placings.

- Speak with a clear, powerful voice.
- Open reasons with a precise opening statement.
- Never carry notes into reason room.
- Stand erect, with feet aligned with shoulders.
- Stand 4 to 8 feet from reason-taker.
- Talk in a firm voice without shouting.
- Use good voice control, both in speed and volume.

  ☑ **NOTE:** Emphasis on certain points is very important in giving reasons.

- Present reason-taker with an accurate picture of the animal.
- Avoid body movement.

  ☑ **NOTE:** Some head movement is acceptable.

- Use identification characteristics whenever possible to let the reason-taker know that you did see the class.
- Look the reason-taker squarely in the eye.

- Stay within the allotted two minutes.

  ☑ **NOTE:** The reasons should last from one minute and twenty seconds to one minute and forty-five seconds.

- Avoid using more than three terms in succession.

- Never conclude reasons with, "For these reasons, I placed this class . . ."

OBJECTIVE 21

Optional Activities/ Resources in Instructor's Guide

Arrange in order steps to follow in presenting oral reasons for placings.

☑ **NOTE:** A class of four animals is divided into three pairs: a top or initial pair, a middle or intermediate pair, and a bottom or concluding pair. The following examples are for a set of reasons for a placing of 1 - 2 - 3 - 4.

1. Present opening statement.

   EXAMPLE: Give the name of class and how it was placed. Give criticisms and outstanding good points.

   ☑ **NOTE:** In some cases, a general statement about the entire class may be more applicable.

2. Discuss the top pair.

   EXAMPLE: Give reasons for placing 1 over 2, using comparative terms. Give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1. Give criticisms of 2, using descriptive terms.

   ☑ **NOTE:** In close placings, several grants would be desirable as long as they are true. Always criticize an animal on its own merits rather than by comparing it to the animal placed above.

3. Discuss middle pair.

   EXAMPLE: Give reasons for placing 2 over 3 and give grants for 3 over 2. Give criticisms of 3.

4. Discuss bottom pair.

   EXAMPLE: Give reasons for placing 3 over 4, and give grants for 4 over 3.

OBJECTIVE 22	**Complete Assignment Sheet 3.**
OBJECTIVE 23	**Complete Assignment Sheet 4.**
OBJECTIVE 24	**Complete Assignment Sheet 5.**
OBJECTIVE 25	**Complete Assignment Sheet 6.**
OBJECTIVE 26	**Complete Assignment Sheet 7.**
OBJECTIVE 27	**Complete Assignment Sheet 8.**
OBJECTIVE 28	**Complete Assignment Sheet 9.**
OBJECTIVE 29	**Complete Assignment Sheet 10.**

ASSIGNMENT SHEET 1

BEEF BREEDS AND SELECTION

D2

Name ______________________________ Score __________

OBJECTIVE 16

Compute placing scores.

INTRODUCTION

In each livestock class there is a total of 50 possible points, with a score of 50 being perfect. There are twenty-four possible placings on any given class. Prior to your judging the class, a group of selected officials will have already evaluated the class, determined the official placings, and identified the different cuts that each class should receive. The cuts are used to compute your score.

INSTRUCTIONS

Operation and Calculation
- Calculate with whole numbers

Math Application
- Solve word problems

Work the following problems.

1. Class 1, Simmental heifers. Official Placings are 2 - 1 - 3 - 4 with cuts of 5, 4, 3. You placed the class 2 - 4 - 3 - 1. What is your placing score?

   Your score = _______________

2. Class 2, Angus steers. Official placings are 4 - 1 - 3 - 2 with cuts of 5, 5, 5. You placed the class 1 - 4 - 3 - 2. What is your placing score?

   Your score = _______________

3. Class 3, Hereford heifers. Official placings are 3 - 2 - 1 - 4 with cuts of 4, 4, 4. You placed the class 2 - 1 - 3 - 4. What is your placing score?

   Your score = ________________

4. Class 4, Market steers. Official placings are 4 - 1 - 3 - 2 with cuts of 5, 4, 4. You placed the class 3 - 1 - 4 - 2. What is your placing score?

   Your score = ________________

5. Class 5, Brangus heifers. Official placings are 3 - 2 - 4 - 1 with cuts of 4, 4, 4. You placed the class 4 - 1 - 2 - 3. What is your placing score?

   Your score = ________________

ASSIGNMENT SHEET 2

BEEF BREEDS AND SELECTION

D2

Name ______________________________ Score __________

OBJECTIVE 18

Evaluate sets of written reasons for placing classes of beef cattle.

INTRODUCTION

In writing reasons for placing classes of beef cattle it is essential that you understand how the terms for desirable and undesirable traits are used and how they are tied together. You must also be able to evaluate placing reasons for clarity, correct style, and correctness.

Part 1

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Draw conclusions
- Predict results/outcomes

Circle the terms for desirable traits, and underline the terms for undesirable traits in the set of written reasons below.

CROSSBRED STEER REASONS

I placed these crossbred steers 4 - 3 - 2 - 1. I considered 4 a placeable top as he has the best combined size, muscling, and correctness of finish. However, I would like to see him stronger over his top.

In my top pair, I preferred 4 over 3, as 4 was a taller, longer-patterned steer that was especially longer in his rump. Furthermore, 4 was a thicker, wider-topped steer that had more shape and expression of muscling down through his quarter than 3. Four was a trimmer, firmer-handling steer that would hang up a heavier-muscled, higher-cutability carcass. I will grant 3 was a straighter lined steer that was flat in his quarter.

In my middle pair, I placed 3 over 2, as 3 was a nicer-balanced, stretchier steer. Three was a cleaner-fronted steer that was trimmer in his middle and firmer-handling down his top than 2. In addition, 3 was standing on more substance of bone and was deeper ribbed than 2. Three will hang up a trimmer carcass with a higher ratio of lean to fat. I will concede that 2 was a wider-standing, heavier-muscled steer, but I criticize him as he was a heavy-fronted, patchy-finished steer that was too small.

In moving to my bottom pair, I liked 2 over 1, as 2 was the thickest-topped, heaviest-quartered steer in the class. Two was a deeper-ribbed steer that did stand on more length of leg than 1. I realize that 1 was a much trimmer steer, being especially trimmer over his top and through his middle. However, I placed 1 last as he was a small-framed, light-muscled steer that was bare over his ribs. In addition, 1 was an extremely light-quartered steer that would hang up the carcass least apt to grade "choice."

Part 2

Read the set of written reasons below, and then evaluate them by answering the questions that follow.

ANGUS HEIFER REASONS

I placed these Angus heifers 1 - 2 - 3 - 4. One was the largest, growthiest heifer in the class, although I would like to see her stand straighter behind.

In my top pair, however, I did place 1 over 2 as 1 was a taller, longer-bodied heifer that had more femininity about her head. In addition, 1 was a nicer-balance heifer that had more evidence of muscle down her top and more volume through her quarter than 2. One also stood wider in front and was deeper in her forerib than 2. However, I will grant that 2 was a trimmer-conditioned heifer that stood on straighter feet and legs. However, I faulted her and placed her second as she was a plain-headed, low-set heifer.

In reference to the middle pair, I preferred 2 over 3 primarily because 2 was a straighter-lined, stronger-topped heifer that moved out straighter in front and behind than 3. Furthermore, 2 had more shape and expression of muscle over her top and had a thicker, deeper quarter than 3. I will readily concede that 3 was a more feminine-headed heifer that had more elevation. However, I criticize her and place her third as she was a high-conditioned, light-muscled, narrow-made heifer from end to end.

In moving to my bottom pair, I placed 3 over 4, as 3 was a larger, growthier heifer that exhibited more overall growth potential than 4. In addition, she was a straighter-lined, leveler-rumped heifer that stood on more substance of bone than 4. I do grant that 4 was an extremely clean-fronted, trim-conditioned heifer, but I placed 4 last as she was the smallest-framed, lightest-muscled, poorest-balanced heifer in the class.

1. Are the reasons written in a clear, concise manner? __________

2. Did the reasons convince you that the class was placed correctly? __________

   Justify your answer. __________

   ____

   ____

3. Did the writer use correct terms for desirable and undesirable traits? __________

4. Did you find any terms for desirable or undesirable traits that lacked meaning or purpose? __________

   If so, name them. __________

   ____

   ____

5. Would you make changes in any of the placing reasons? _____

   Write your changes. __________

   ____

   ____

6. Could the placing reasons be given in less than two minutes?

7. Would the reason-taker be able to identify the animals from the judge's reasons? __________

   Why or why not? __________

   ____

   ____

   ____

Name ______________________ Score __________

OBJECTIVE 22

Evaluate characteristics of a cow.

INSTRUCTIONS

Reading Comprehension
- Gain factual information

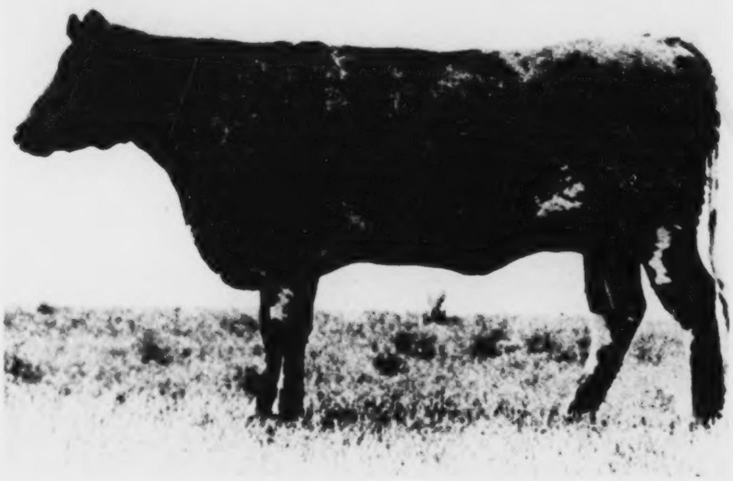
Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

Evaluate the characteristics of each cow shown in the following pictures. List desirable and undesirable traits.

1.

FIGURE 1

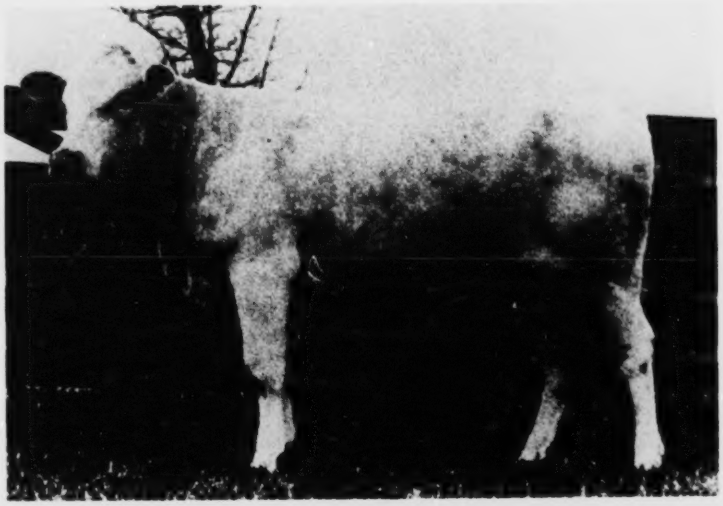


Courtesy: American Shorthorn Association, Omaha, Nebraska.

Desirable Traits	Undesirable Traits
______________	______________
______________	______________
______________	______________
______________	______________
______________	______________

2.

FIGURE 2

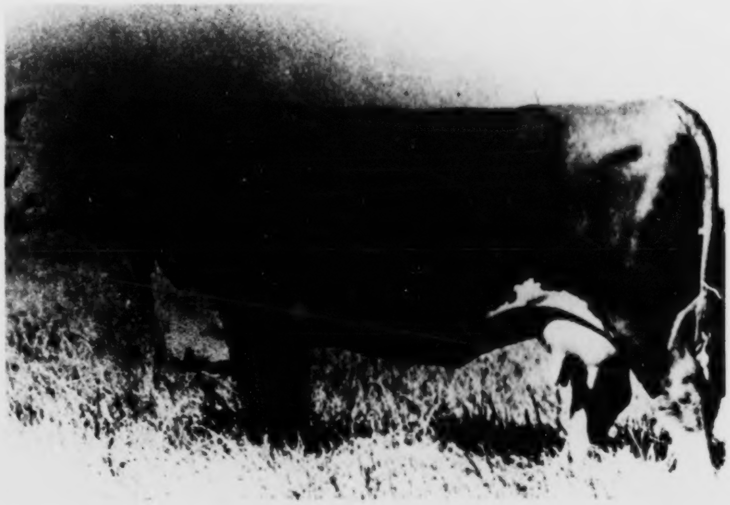


Courtesy: American Charolais Association, Kansas City, Missouri.

Desirable Traits	Undesirable Traits

3.

FIGURE 3

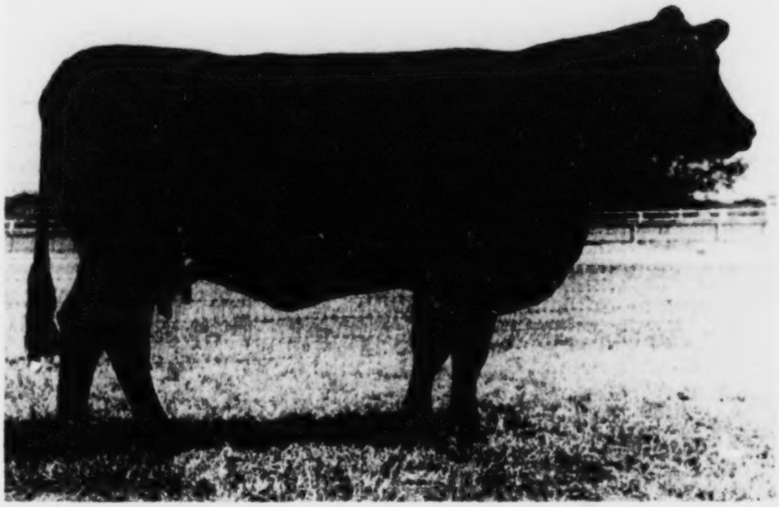


Courtesy: American Hereford Association, Kansas City, Missouri.

Desirable Traits	Undesirable Traits

4.

FIGURE 4

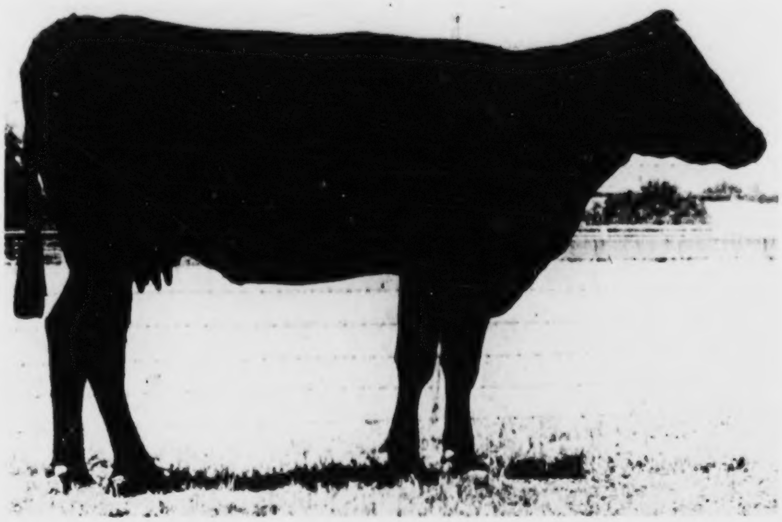


Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits	Undesirable Traits
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

5.

FIGURE 5

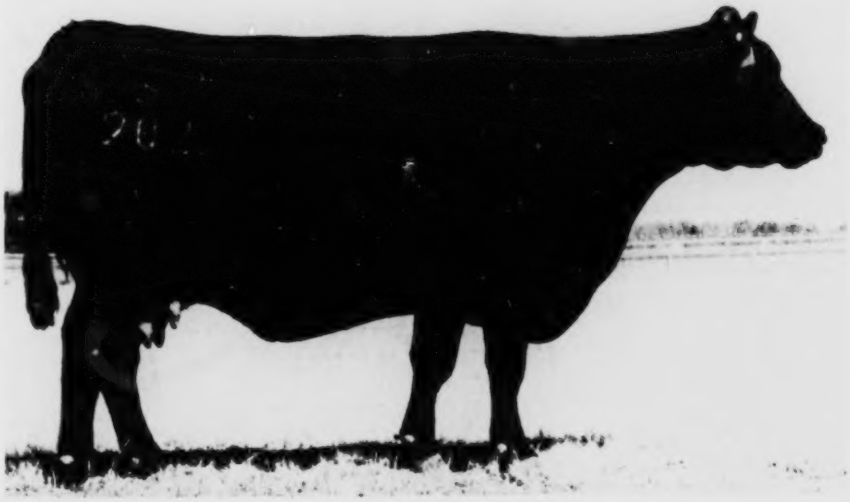


Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits	Undesirable Traits
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

6.

FIGURE 6



Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits	Undesirable Traits
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

BEEF BREEDS AND SELECTION

Name ______________________________ Score __________

OBJECTIVE 23

Evaluate characteristics of a bull.

INSTRUCTIONS

Evaluate the characteristics of each bull shown in the following pictures. List desirable and undesirable traits.

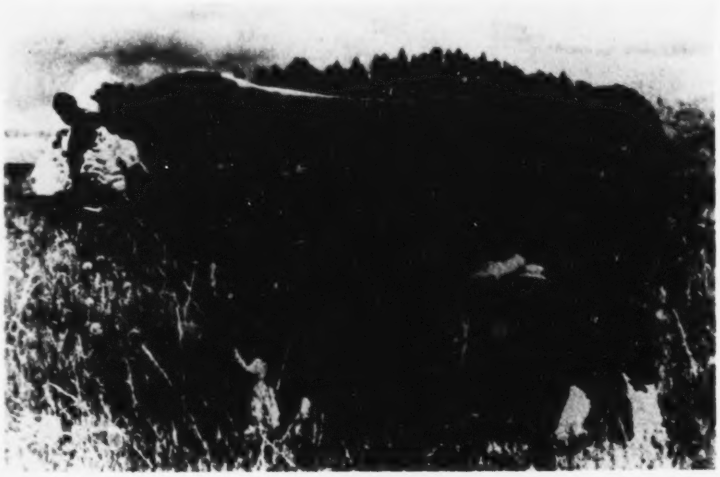
Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

1.

FIGURE 1

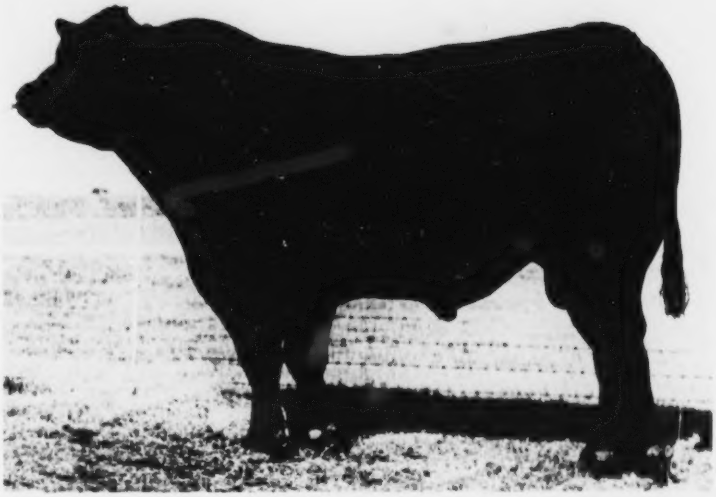


Courtesy: American Polled Hereford Association, Kansas City, Missouri.

Desirable Traits	Undesirable Traits
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________

2.

FIGURE 2

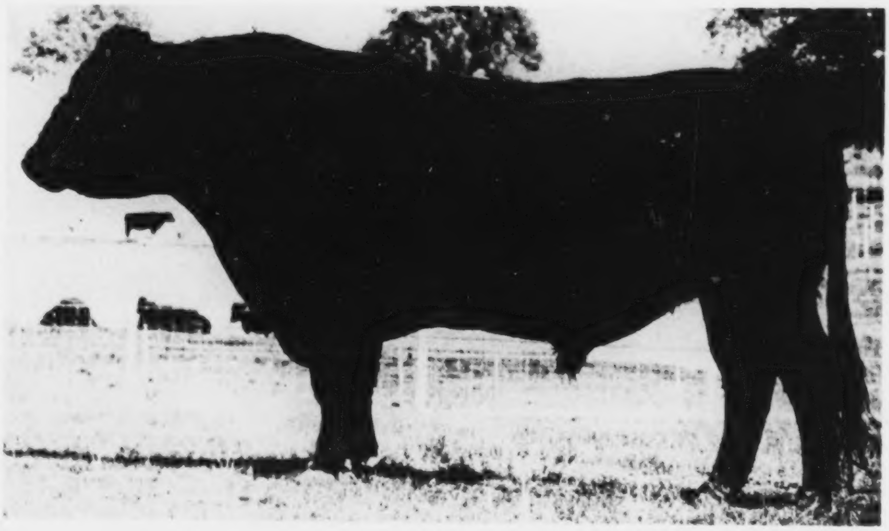


Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits	Undesirable Traits
______________	______________
______________	______________
______________	______________
______________	______________
______________	______________

3.

FIGURE 3



Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits	Undesirable Traits
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

BEEF BREEDS AND SELECTION

Name ______________________ Score __________

OBJECTIVE 24 **Evaluate market steers.**

INSTRUCTIONS Evaluate the characteristics of each market animal shown in the following pictures. List desirable and undesirable traits.

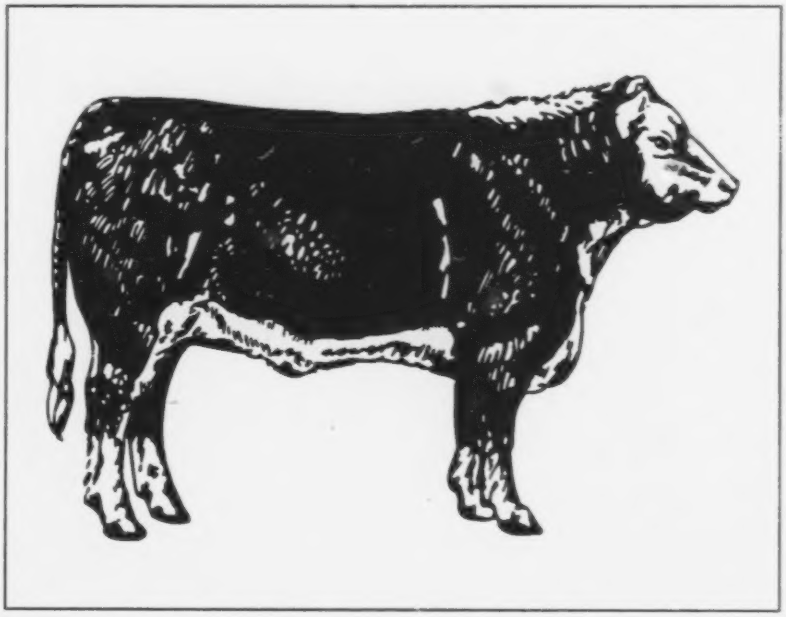
Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

1.

FIGURE 1



Desirable Traits	Undesirable Traits
______________	______________
______________	______________
______________	______________
______________	______________
______________	______________

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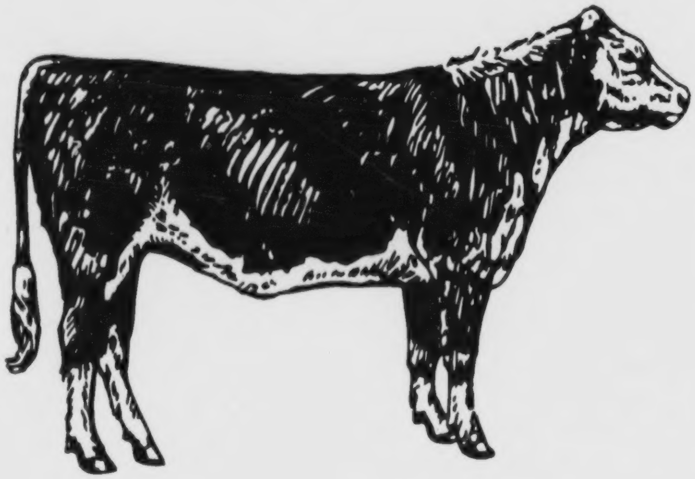
2.

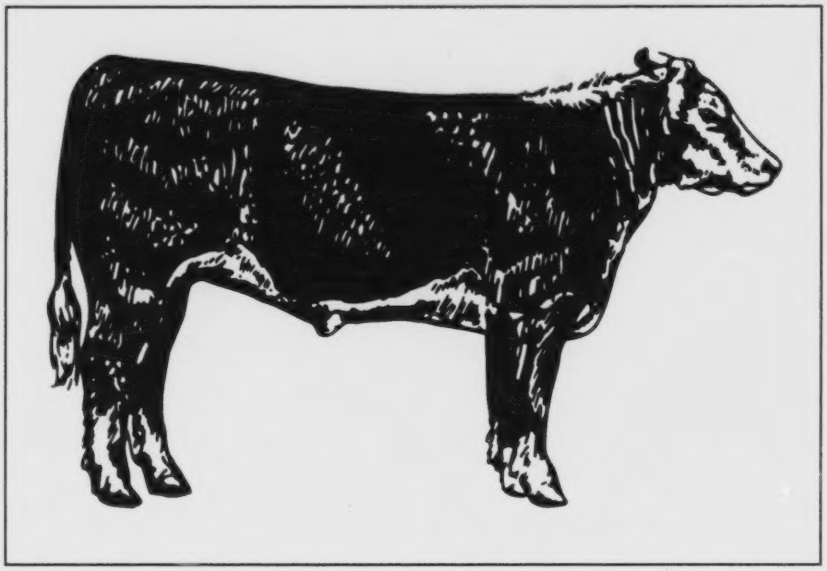
FIGURE 2



Desirable Traits	Undesirable Traits
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

3.

FIGURE 3



Desirable Traits	Undesirable Traits

ASSIGNMENT SHEET 6

BEEF BREEDS AND SELECTION

D2

Name ______________________________ Score __________

OBJECTIVE 25

Judge a breeding class of beef cattle.

INSTRUCTIONS

The instructor or a junior or senior agricultural education student has already placed the officials on a breeding class of beef cattle. You must now judge the class. Write your placings and take notes on the class.

Class name ______________________________ Placings ________

Take notes on the class.

1. ____

____

____

____

____

2. ____

____

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____

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3. ____

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Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

4. ____

____

____

____

____

ASSIGNMENT SHEET 7

BEEF BREEDS AND SELECTION

D2

Name ______________________ Score __________

OBJECTIVE 26

Judge a market classes of steers.

INSTRUCTIONS

The instructor or a junior or senior agricultural education student has already placed the officials on a market class of steers. You must now judge the class. Write your placings and take notes on the class.

Class name ______________________ Placings ________

Take notes on the class.

1. ____

____

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____

____

2. ____

____

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____

____

3. ____

____

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Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

4. ____

____

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ASSIGNMENT SHEET 8

BEEF BREEDS AND SELECTION

D2

Name ____________________ Score __________

OBJECTIVE 27

Write sets of reasons for placing classes of beef cattle.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 6
- Assignment Sheet 7

INSTRUCTIONS

Using the notes you took on previous Assignments Sheets, write your reasons for each class. After writing the reasons, go back through them. Determine if the reasons are convincing, whether the reasons separate the animals from each other, and whether you used appropriate judging terms.

Class name ____________________ Placings ________

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Composition
- Proofread and edit

Cognitive Activities
- Collect/record information
- Draw conclusions

Class name ______________________ Placings ________

Class name ______________________ Placings ________

ASSIGNMENT SHEET 9

BEEF BREEDS AND SELECTION

D2

Name ____________________ Score __________

OBJECTIVE 28

Give a set of oral reasons for placing a class of beef cattle.

INTRODUCTION

Giving reasons orally takes a lot of practice. Your reasons should describe to the reason-taker just how you placed the class. In order to obtain a good score, you must convince the reason-taker that your placings are correct.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 8

INSTRUCTIONS

Select one of the previously written sets of reasons and be prepared to give the reasons orally. Read over your reasons several times. Do not attempt to memorize the reasons, just remember the good points of each animal and the grants. You should have a good opening statement. Stand in front of a mirror and practice your reasons several times.

1. For which class are you giving the reasons? ____________
2. How did you place the class? ____________
3. What is your opening statement? ____________

   ____
4. Have you studied the reasons, and can you present them without using any of your notes? ____________

   ____
5. What is your closing statement? ____________

   ____

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Oral Presentation
- Use good speaking techniques
- Select/use words effectively
- Present appropriate appearance

Interactive Communications
- Give/follow oral directions
- Communicate with professional colleagues/associates

ASSIGNMENT SHEET 10

BEEF BREEDS AND SELECTION

D2

Name ______________________ Score __________

OBJECTIVE 29

Use resource materials to locate information about beef cattle breeds.

INTRODUCTION

Individuals may select one breed of animal over another for many reasons. The bottom line for most breed selection is personal preference. The breed associations and their members have worked hard to improve their breeds of cattle. Many associations conduct research on feed conversion and carcass evaluation.

EQUIPMENT AND SUPPLIES

- Information received from breed associations
- Breed magazines and journals
- Other reference materials and books about cattle breeds

INSTRUCTIONS

Answer the following questions about the breed you have selected for your research.

1. Breed ______________________
2. Where did the breed originate? ______________________
3. What color is the breed? ______________________
4. What are some distinguishing characteristics of the breed?

____

____

____

____

____

____

Reading Comprehension
- Gain factual information
- Draw conclusions
- React to written material

Research and Reference
- Select useful resources
- Find materials in library
- Use standard references
- Use in-book reference tools
- Use magazines and newspapers

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Composition
- Use complete sentences

Research
- Take notes
- Outline material

Cognitive Activities
- Collect/record information
- Draw conclusions

5. What are considered to be some strong points of the breed?

6. What year was the breed introduced in the United States?

7. What are the names of some of the people who contributed to the improvement of the breed or who were responsible for bringing the breed to the United States?

8. What were the names of the foundation sire and dam?

Sire ____________________ Dam ____________________

9. What is the name and address of the breed association?

10. What is the name of the executive secretary of the breed association?

11. Does the breed association have a field secretary? __________

If yes, what is the name? ______________________________

12. Does the breed association publish a magazine or journal?

13. What is the name of the magazine or journal?

____

14. Name some individuals in your community who breed this type of cattle.

____

____

15. Does Oklahoma have a breed association? ____________

If yes, what is the name of the association and where is it located?

____

____

____

16. Are the cows of this breed considered to be good mothers and milkers?

____

17. Does the breed hang up a desirable carcass? ____________

18. Is the breed used extensively in a crossbreeding program?

____

19. Are the bulls considered to be active breeders? ____________

20. What is your opinion of the breed? ________________

____

____

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____

____

____

21. If you were to go into the beef business, would you purchase this breed? Justify your answer.

OBJECTIVE SHEET

SWINE BREEDS AND SELECTION

D3

INTRODUCTION

Swine production in Oklahoma contributed more than $18.7 million dollars to the state's economy in 1992.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Read *Seasonal Hog Prices and Profits* by Clement E. Ward, Joseph E. Williams, and Timm J. Bliss, OSU Fact Sheet No. 508.
WRITING:	Write a one to two page report comparing the profits from each type of hog production and the seasons of profitability. When would you sell your hogs?

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Identify major breeds of swine.
2. Label the parts of a hog.
3. Label wholesale cuts of pork with their proper names and desired percentages of total carcass yield.
4. Define livestock judging.
5. Match to their correct definitions terms associated with livestock judging.
6. List the two major traits of a market hog.
7. List characteristics of the ideal market hog.
8. Distinguish between selected swine-judging terms for desirable and undesirable traits.
9. State the purpose of the FFA placing card.
10. List the steps involved in computing placing scores.
11. Compute placing scores. (Assignment Sheet 1)
12. State the purpose of giving reasons for placings.
13. Arrange in order steps to follow in taking notes for oral reasons for placings.
14. Select from a list techniques for giving oral reasons for placings.
15. Arrange in order steps to follow in presenting oral reasons for placings.
16. Evaluate a set of written reasons for placing a class of swine. (Assignment Sheet 2)
17. Evaluate characteristics of swine types. (Assignment Sheet 3)
18. Judge classes of market swine. (Assignment Sheet 4)
19. Judge a class of breeding swine. (Assignment Sheet 5)
20. Write sets of reasons for placing classes of swine. (Assignment Sheet 6)

21. Give a set of oral reasons for placing a class of swine. (Assignment Sheet 7)

22. Use resource materials to locate information about swine breeds. (Assignment Sheet 8)

SWINE BREEDS AND SELECTION

OBJECTIVE 1

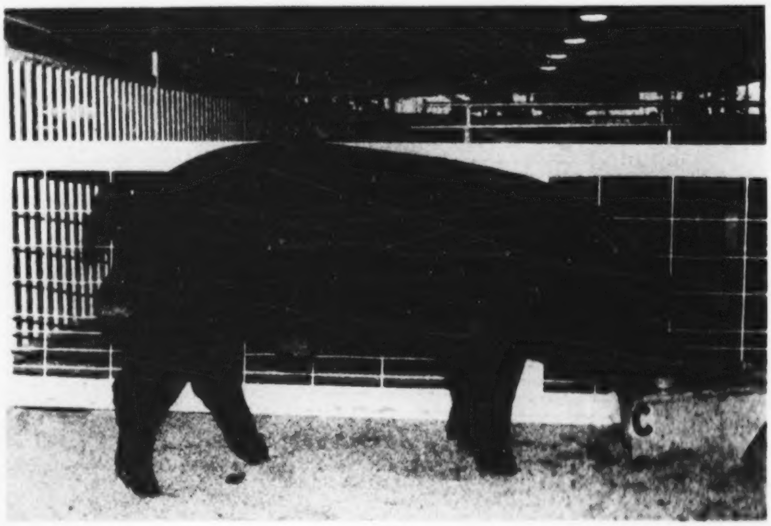
Optional Activities/
Resources in
Instructor's Guide

Identify major breeds of swine.

- Duroc

  ☑ **NOTE:** Characteristics of the Duroc are a red color, although color may vary from a light golden to a very dark red; medium-length body with a slightly dished face; and drooped ears.

FIGURE 1

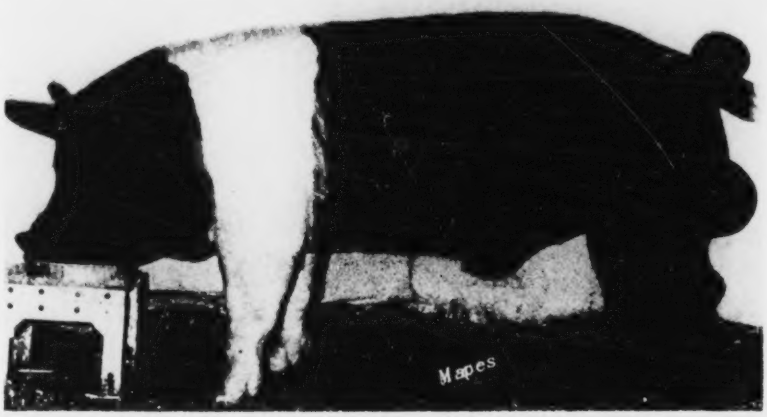


Courtesy: United Duroc Swine Registry.

- Hampshire

  ☑ **NOTE:** The main characteristics of the Hampshire are a black, medium-length body with a white belt encircling the shoulders, front legs, and feet.

FIGURE 2

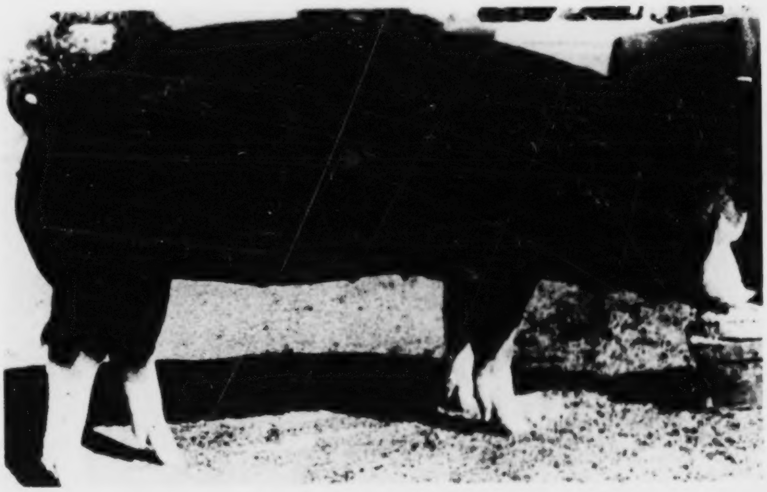


Courtesy: Hampshire Swine Registry.

- Poland China

  ☑ **NOTE:** The main characteristics of the Poland China are a black body with six white points (feet, nose, tail), and drooped ears.

FIGURE 3

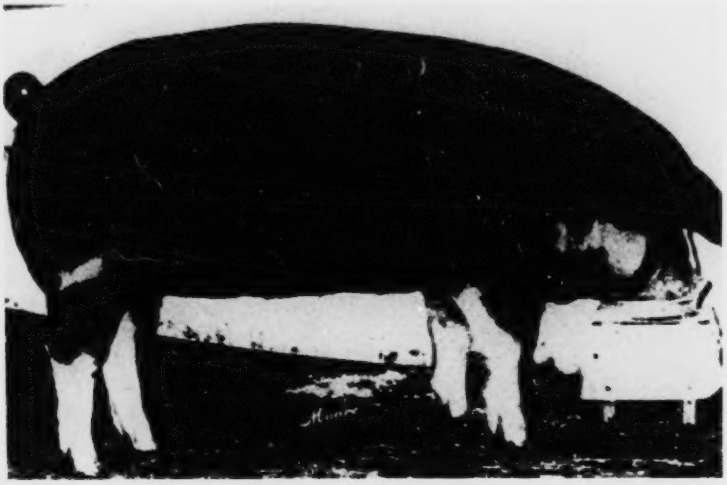


Courtesy: Poland China Association.

- Spots

☑ **NOTE:** The main characteristics of the Spots breed are a body that is spotted 50 percent white and 50 percent black and drooping ears.

FIGURE 4

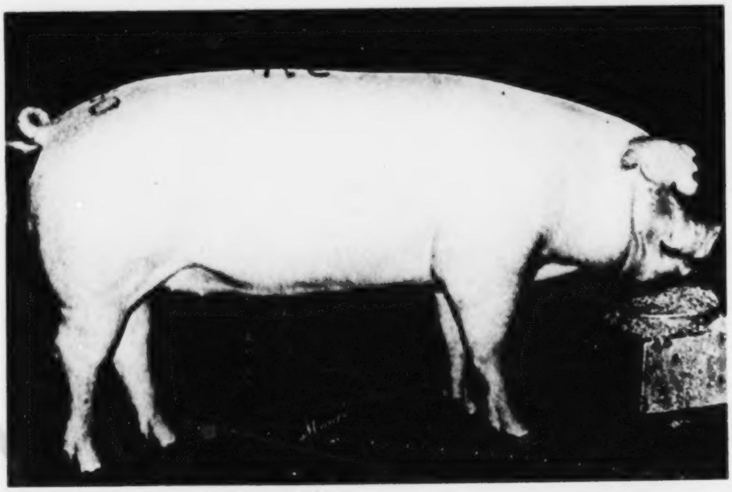


Courtesy: National Spotted Swine Record, Inc.

- Chester White

☑ **NOTE:** The main characteristics of the Chester White are a white body and drooping ears.

FIGURE 5

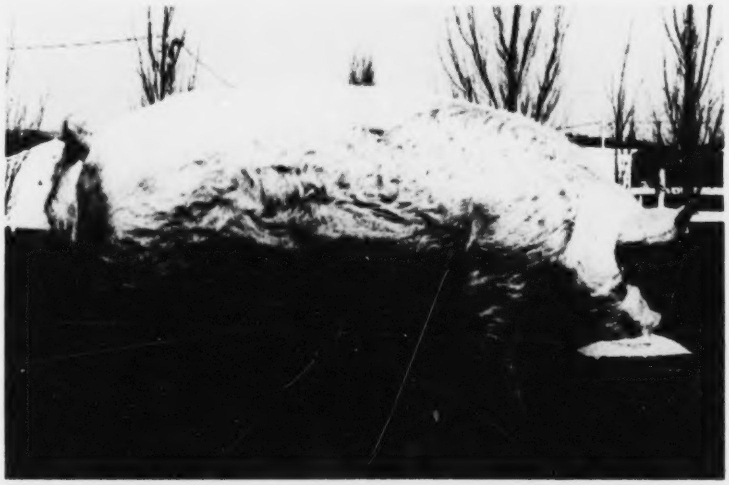


Courtesy: Chester White Swine Record Association.

- Yorkshire

  ☑ **NOTE:** The main characteristics of the Yorkshire are a white body and erect ears.

FIGURE 6

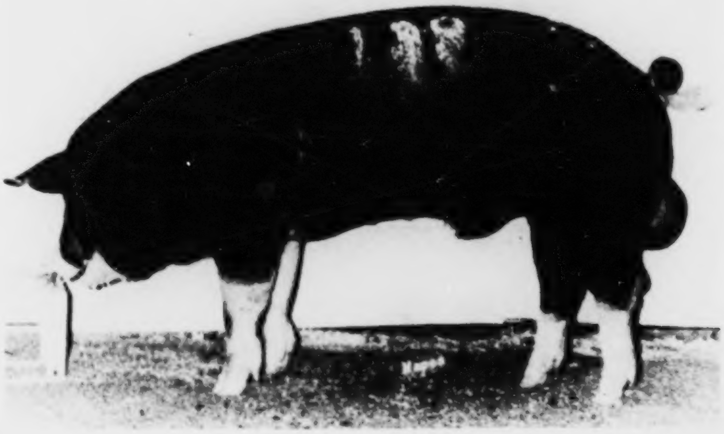


Courtesy: American Yorkshire Club.

- Berkshire

  ☑ **NOTE:** The main characteristics of the Berkshire are a black body with six white points (feet, face, tail), and erect ears.

FIGURE 7

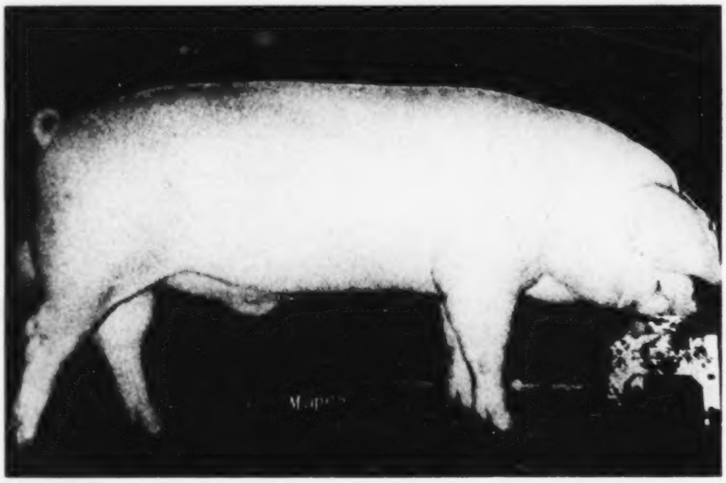


Courtesy: American Berkshire Association.

- Landrace

  ☑ **NOTE:** The main characteristics of the Landrace are a white, extremely long body, and large drooping ears.

FIGURE 8



Courtesy: American Landrace Association.

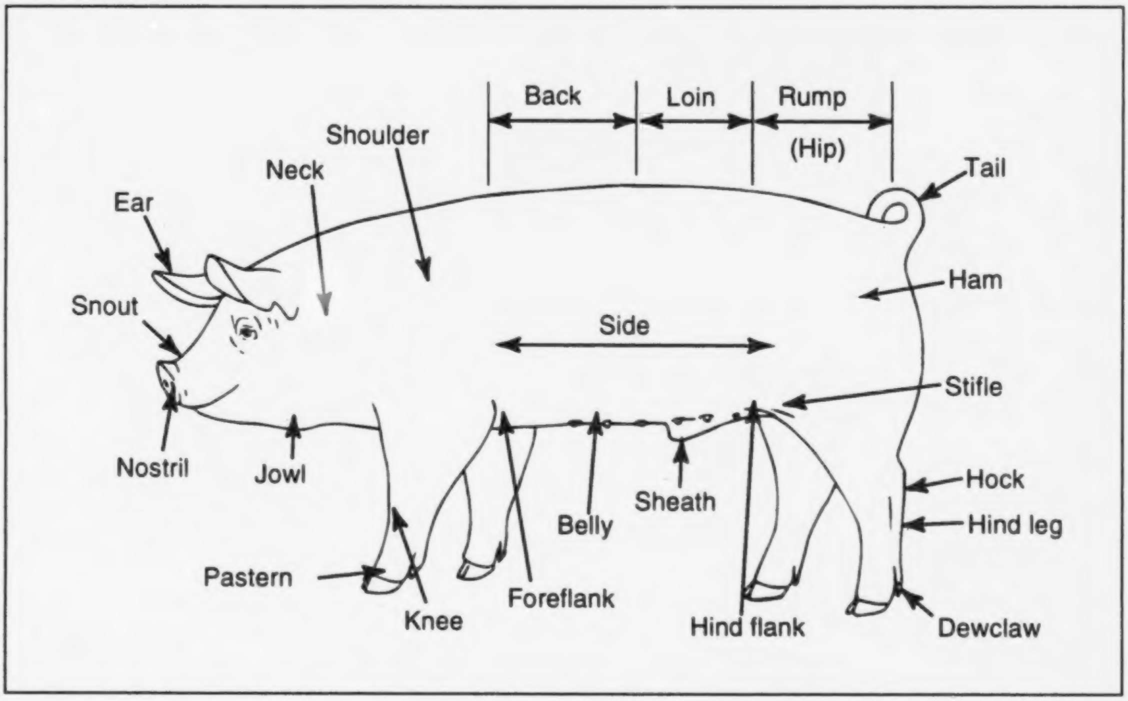
OBJECTIVE 2

Required Activities/
Resources
- Transparency Master 1

Label the parts of a hog.

You will see a transparency showing the parts of a hog.

FIGURE 9


Back
Loin
Rump
(Hip)
Shoulder
Neck
Tail
Ear
Ham
Snout
Side
Stifle
Nostril
Jowl
Hock
Sheath
Belly
Hind leg
Pastern
Foreflank
Knee
Hind flank
Dewclaw

Adapted with permission of the National Pork Producer Council.

OBJECTIVE 3

Required Activities/ Resources
- Transparency Master 2
- Discussion

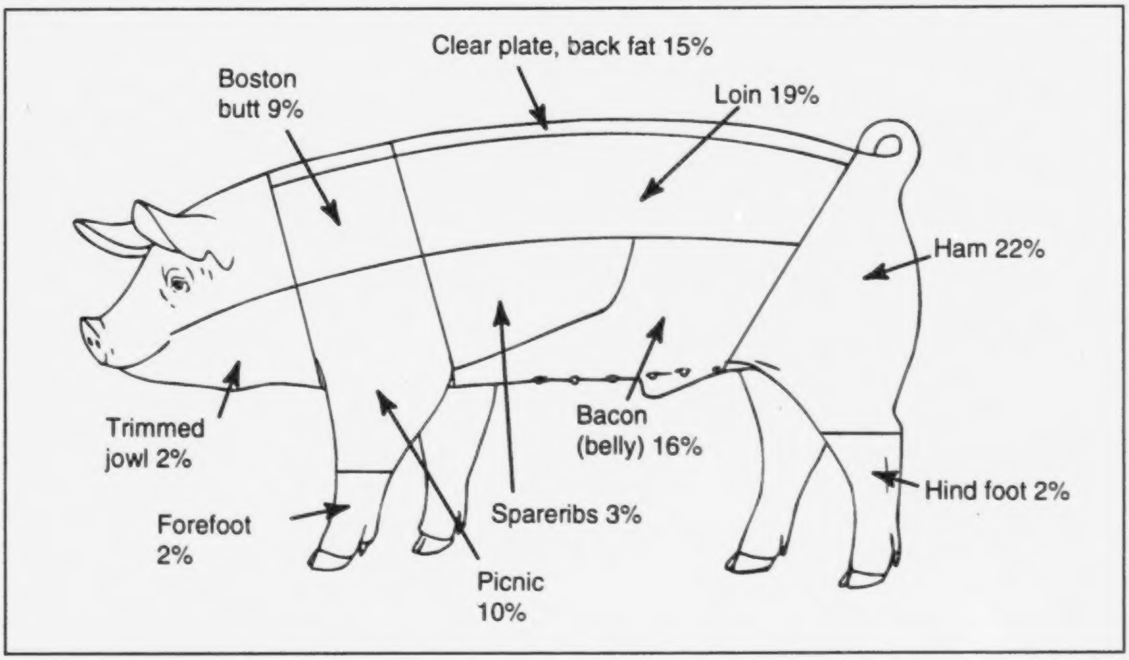
Optional Activities/ Resources in Instructor's Guide

Label wholesale cuts of pork with their proper names and desired percentages of total carcass yield.

You will see a transparency showing the wholesale cuts of pork.

Start a discussion by asking "What is the difference in the way the producer and the packing plant market the animals?"

FIGURE 10


Clear plate, back fat 15%
Boston butt 9%
Loin 19%
Ham 22%
Trimmed jowl 2%
Bacon (belly) 16%
Hind foot 2%
Forefoot 2%
Spareribs 3%
Picnic 10%

Adapted with permission of the National Pork Producer Council.

OBJECTIVE 4

Optional Activities/ Resources in Instructor's Guide

Define livestock judging.

- Process of carefully analyzing an animal's individual traits and comparing those traits to an ideal animal or standard

OBJECTIVE 5

Optional Activities/
Resources in
Instructor's Guide

Match to their correct definitions terms associated with livestock judging.

- **breed character** – traits that distinguish one breed from another

  ☑ **NOTE:** Refers to characteristics of the animal's head, such as shape, length and dish of face, and set of ears.

- **broodiness** – combination of characteristics indicating that the female probably will be a good mother; used only with breeding stock
- **femininity** – traits distinguishing a female from a male
- **grant** – recognition that an animal has desirable traits but that these traits are not acceptable to be used any higher in class
- **growthiness** – condition of having appropriate size and weight for age
- **meatiness or muscling** – high proportion of volume in the areas of high-priced cuts
- **masculinity** – traits distinguishing a male from a female
- **quality** – overall smoothness, blending of shoulders, and refinement of head and bone
- **ruggedness** – masculine quality of having large bones and frame
- **scale** – size of animal as determined by skeletal structure; should be independent of weight
- **soundness** – quality of being correct on the feet and legs, used primarily with breeding stock
- **trimness** – freedom from excess finish or fat
- **type** – combination of characteristics that make an animal most useful for a specific purpose; a general term

OBJECTIVE 6

Optional Activities/
Resources in
Instructor's Guide

List the two major traits of a market hog.

WORDS YOU SHOULD KNOW	
market hog	swine raised for slaughter at a weight of 240 pounds
production	hog's ability to reproduce and grow

- **production** – 50 percent emphasis
- **carcass** – 50 percent emphasis

OBJECTIVE 7

Required Activities/
Resources
– Transparency Master 3

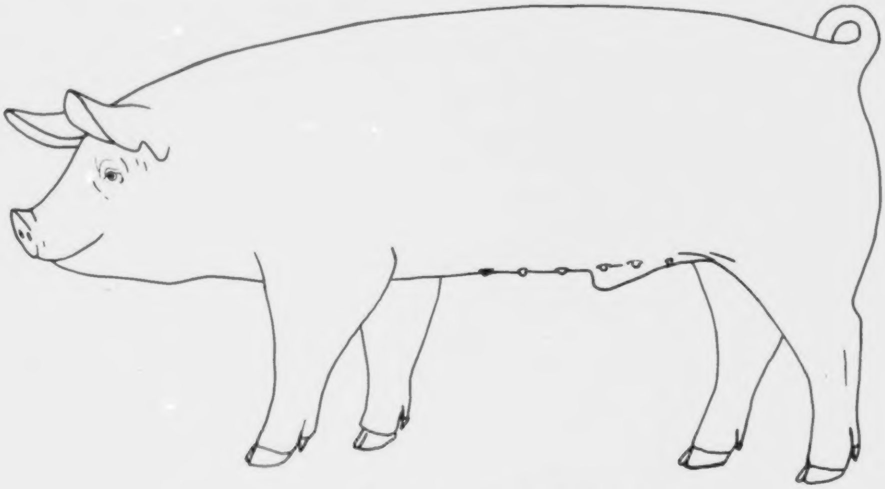
Optional Activities/
Resources in
Instructor's Guide

List characteristics of the ideal market hog.

You will see a transparency showing a market hog.

WORDS YOU SHOULD KNOW	
barrow	male swine that have been castrated
boar	uncastrated male swine
gilt	young female swine that have not reproduced
sow	mature female swine that have produced a litter of pigs

FIGURE 11



Symbol—NPPC Model Hog

Used with permission of the National Pork Producers Council.

- Raised in a litter of ten pigs
- Reached market weight in 150 days
- Has market weight of 240 pounds
- Has 32-inch-long carcass

  ☑ **NOTE:** Carcass length is determined by measuring from the first rib to the hipbone, or H-bone.

- Has 0.70 inch of back fat at tenth rib
- Has 5.8 square inches of loin eye

OBJECTIVE 8

Distinguish between selected swine-judging terms for desirable and undesirable traits.

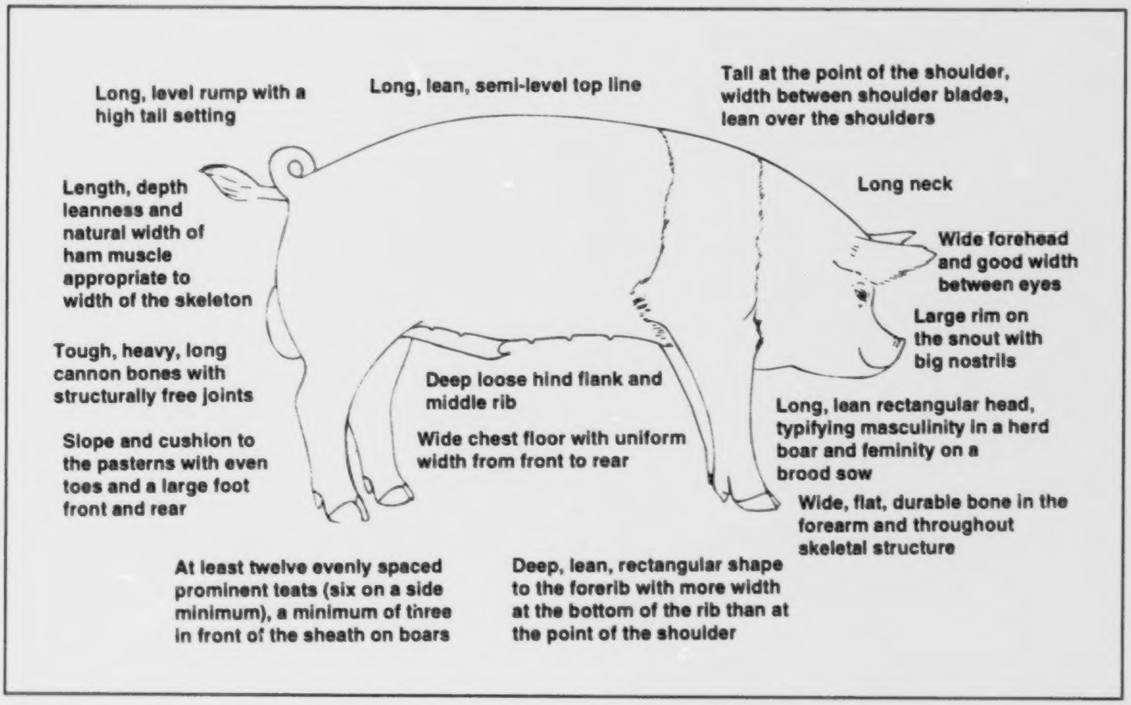
Required Activities/
Resources
- Transparency Master 4
- Discussion

Optional Activities/
Resources in
Instructor's Guide

You will see a transparency master showing the traits of a hog.

Discuss why swine-judging terms are listed as desirable and undesirable.

FIGURE 12


Long, level rump with a high tail setting
Long, lean, semi-level top line
Tall at the point of the shoulder, width between shoulder blades, lean over the shoulders
Length, depth leanness and natural width of ham muscle appropriate to width of the skeleton
Long neck
Wide forehead and good width between eyes
Large rim on the snout with big nostrils
Tough, heavy, long cannon bones with structurally free joints
Deep loose hind flank and middle rib
Long, lean rectangular head, typifying masculinity in a herd boar and feminity on a brood sow
Slope and cushion to the pasterns with even toes and a large foot front and rear
Wide chest floor with uniform width from front to rear
Wide, flat, durable bone in the forearm and throughout skeletal structure
At least twelve evenly spaced prominent teats (six on a side minimum), a minimum of three in front of the sheath on boars
Deep, lean, rectangular shape to the forerib with more width at the bottom of the rib than at the point of the shoulder

Used with permission of Hampshire Swine Registry.

AREA	**DESIRABLE**	**UNDESIRABLE**
Frame	Larger-framed	Smaller-framed
	Bigger-scaled	Smaller-scaled
	Skeletal extension	Small-framed, short-bodied, low-fronted
	Longer-rumped	Shorter-rumped
	Larger or more correct	Smaller-framed
	Longer-sided	Shorter-bodied or -sided
	Taller-fronted	Low-fronted
	Three-dimensional frame or capacity (long, deep, and wide)	Short, narrow, shallow
Volume and durability	Heavier-boned	Light-boned
	Heavier-structured	Light-boned, fine-featured
	Heavier-skeletoned	Light-boned, frail
	Big-footed	Small-footed
	Stouter-headed	Narrow-headed, fine-featured
	Bigger, wider-fronted	Narrow-chested, narrow-made
	More width between the blades (scapulas)	Narrow-topped
	More natural width and structure down the top, between the legs	Narrow-made, narrow-topped
	Tougher, more durable	Narrow, light-skeletoned
	Bigger-footed, heavier-boned	Small-footed, light structured
	More width through lower body cavity	Pinched in rib, narrow through lower body cavity
	Deeper-bodied	Shallow-bodied, high flanked
	Larger volume	Shallow-bodied, narrow-made
	More capacity	Shallow, round-bodied, narrow
	More total inside dimension	Shallow, round-bodied, narrow
	More width through chest	Narrow-fronted, less volume
	Deeper, looser flank	High in flank
	Deeper middle	Shallow-bodied, shallow-flanked
	Looser-flanked	Tight-flanked
	Bolder-sprung	Flat-ribbed, narrow-chested
	More width through center part of body	Flat-ribbed, narrow
	Deeper, more rectangular forerib	Shallow, round-bodied

AREA	DESIRABLE	UNDESIRABLE
Skeletal structure and movement	More level-topped	High-topped
	Flatter-topped	High-topped
	Level and longer-rumped	Short, steep-rumped
	Higher and more correct in tail setting	Steep-rumped and low tail setting
	Freer-moving	Unsound; restricted in movement
	Sounder-footed	Unsound; restricted in movement
	Freer-wheeling	Unsound; restricted in movement
	More mobile, easier-moving	Unsound; restricted in movement
	Took a longer stride up front and/or behind	Short-stepping or striding; restricted in movement
	More correct set or slope to shoulder or scapula	Steep, straight, or too far forward in shoulder or scapula
	More flex or cushion to knee or pastern	Straight-fronted, stiff-moving, buck-kneed, over at knees
	Moved out with more cushion up front	Straight-fronted, stiff-moving, buck-kneed, over at knees
	More flex and give to rear hock	Post-legged, straight in hock and pastern
	More even toe size	Smaller inside toe, uneven toe size
	Looser-structured	Tight-structured
	Looser-constructed	Tight-structured
	More flexible in skeleton	Tighter, more rigid in structure
	More flexible or looser in spine	High-topped, rigid
	More confinement-adaptable	Unsound, structurally unsound, less longevity in confinement situation
	More easily adapted to confinement	Unsound, structurally unsound, less longevity in confinement situation
Femininity and underlines	Longer-necked	Shorter-necked
	Longer-faced or -headed	Shorter-faced or -headed
	More feminine headed (gilts)	More masculine, short-headed, coarse or masculine
	More feminine fronted (gilts)	Short-necked, short-headed, tight-structured
	More productively designed (gilts)	Unsound, poor underline
	Broodier (gilts)	Unsound, poor underline
	More prominent underline (gilts or boars)	Inverted teat, pin teat, blunt teat; less prominent
	More evenly spaced underline (gilts or boars)	Poorly spaced underline
	More refined, higher-quality underline (gilts or boars)	Blunt or coarse, low-quality underline
	More pin-shaped nipple (gilts or boars)	Blunt or coarse, low-quality underline
	More functionally correct underline	Inverted, pin, blind teats; low-quality, poor spacing
	Started farther forward with underline (boars or gilts)	Started farther back with underline

AREA	DESIRABLE	UNDESIRABLE
Muscling	Heavier-muscled	Lighter-muscled
	Longer-muscled	Short, tight muscle structure
	More width of top and rump	Narrow-topped and -rumped
	Longer, more level rump and deep ham	Less width and volume of ham
	More width and natural muscle volume	Narrow, light-muscled
	More muscle volume	Narrow, light-muscled
	More natural structure and total muscle dimension	Narrow, light-muscled
	More total muscle volume spread over a bigger, wider skeleton	Narrow, light-muscled
	Natural thickness of top	Narrow-topped
	Wider-topped	Narrow-topped
Fat cover	Trimmer	Fatter, overfinished, wasty, carried excess condition
	Leaner	Fatter, overfinished, wasty, carried excess condition
	Leaner down top, loin edge	Excessive grease down loin area
	Cleaner, trimmer through jowl and elbow pocket	Carried excess waste through jowl and elbow pocket
	Trimmer-finished (barrows)	Overfinished, wasty
	Trimmer-conditioned (gilts)	Overconditioned, wasty
	Freer of grease down loin edge	Wasty down top and loin edge
	Freer of grease over point of shoulder	Wasty over shoulder and top
	Exhibited more shoulder blade action	Wasty over shoulder and top
Market hogs only	More versatile or flexible in market weight; later-maturing	Should hang the narrowest, lightest-muscled carcass of the class
	Better combination of production and carcass characteristics	Should yield a wastier, more overfinished carcass
	Should yield a heavier-muscled carcass	Should yield a carcass with less muscle
	Should yield a carcass with more muscle	Should hang a short, wasty carcass with excess waste trim
	Should hang a trimmer, meatier, more muscular carcass	
	Should hang a carcass with more spread and thickness of loin, combined with a longer, deeper, thicker ham	
	Should yield a carcass with a higher percentage of leaner cuts	
	Should yield a carcass with a high ratio of lean to fat	
	Should hang a trimmer carcass with less waste trim	
	Should hang a longer, trimmer carcass with more muscle.	

OBJECTIVE 9

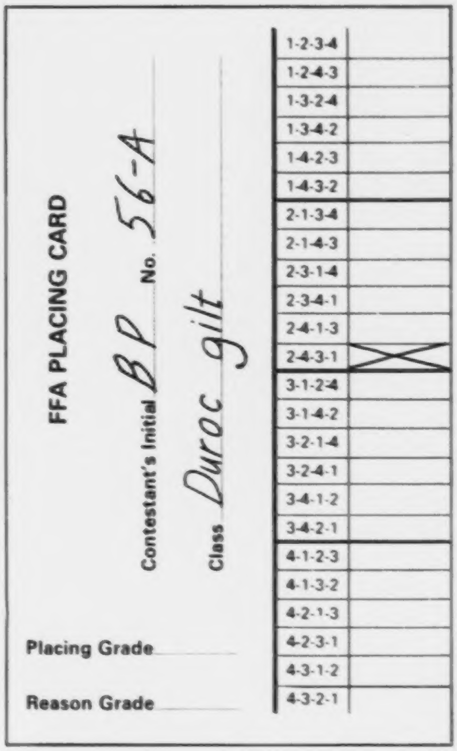
Optional Activities/ Resources in Instructor's Guide

State the purpose of the FFA placing card.

- Identify the judge
- Record the placing
- Relate to officials how the class was placed

☑ **NOTE:** Fill out the card in pencil, and write clearly. An incorrectly written card can cause a team to lose a contest.

FIGURE 13



FFA PLACING CARD

Contestant's Initial BP No. 56-A

Class Duroc gilt

Placing Grade

Reason Grade

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	☒
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

OBJECTIVE 10

Optional Activities/ Resources in Instructor's Guide

List the steps involved in computing placing scores.

☑ **NOTE:** There are always four animals in a livestock class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.

1. Compare your placings to official placings.

EXAMPLE:

Official Placings	Your placings
1 - 4 - 3 - 2 2 5 4 (cuts)	1 - 2 - 3 - 4

2. Write your placings as pairs.

EXAMPLE: 1/2 2/3 3/4

1/3 2/4

1/4

3. Use cuts to calculate points.

   a. Compare each pair you placed to the corresponding pair in the official placing.

   b. Count zero points for each matching pair.

   c. Count points for pairs that do not match by adding cuts that fall between the paired numbers.

   d. Total the points for all pairs.

   EXAMPLE:

Official Placings	Your placings
1 - 4 - 3 - 2 2 5 4 (cuts)	1 - 2 - 3 - 4

   1/2 = 0 points 2/3 = 4 points 3/4 = 5 points

   1/3 = 0 points 2/4 = 9 points

   1/4 = 0 points

   Total of points = 4 + 9 + 5 = 18

4. Subtract total points from 50 to find placing score.

EXAMPLE: Subtract 18 points from 50 points = 32 points

Your score = 32

☑ **NOTE:** If the class had placed 4 - 1 - 3 - 2, there would have been a top switch, which would have cost two points, making your score 48 points. With a placing of 1 - 3 - 4 - 2, the 3 and 4 switch would have cost you 5 points, for a score of 45.

OBJECTIVE 11

Complete Assignment Sheet 1.

OBJECTIVE 12

State the purpose of giving reasons for placings.

Optional Activities/
Resources in
Instructor's Guide

- To present your opinion and justification for placing a class of livestock

OBJECTIVE 13

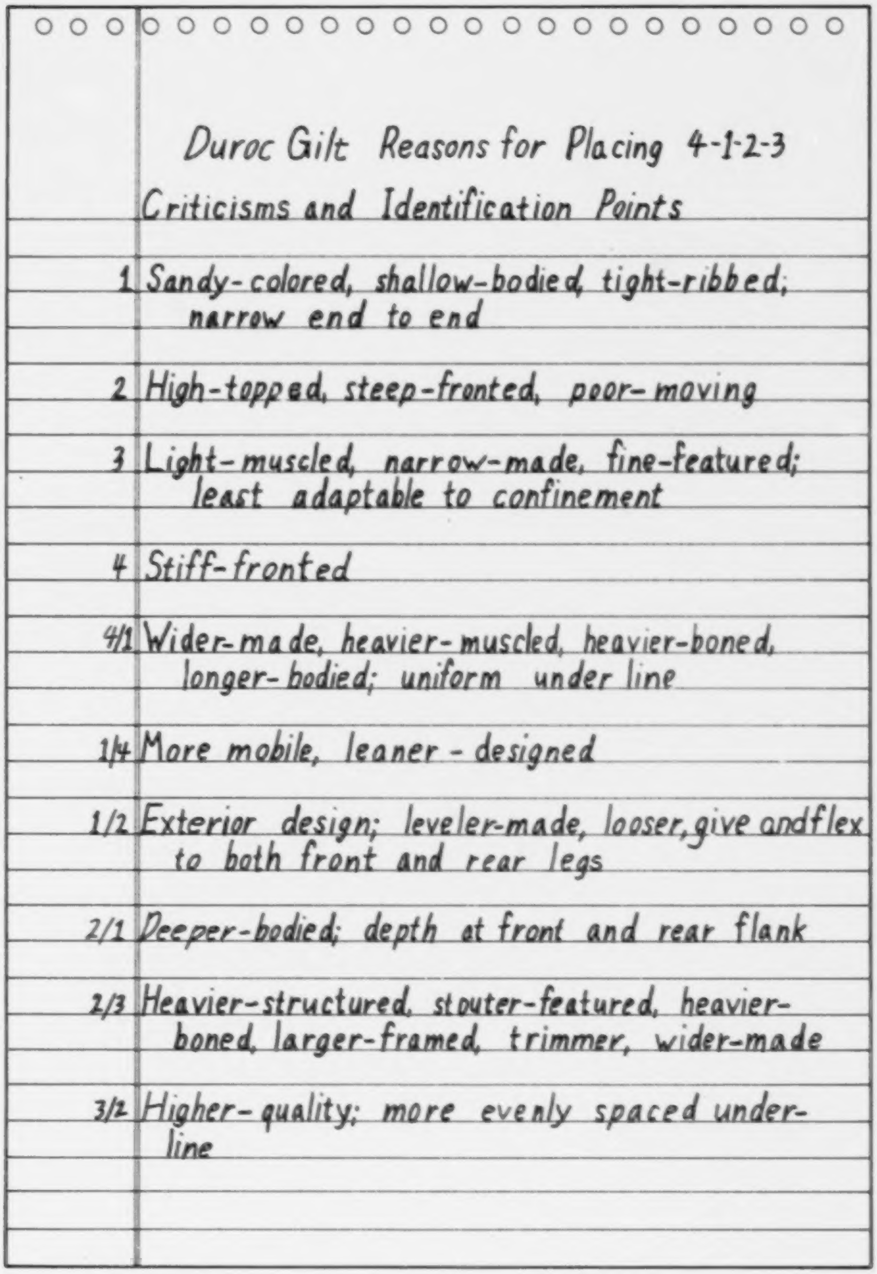
Arrange in order steps to follow in taking notes for oral reasons for placings.

Optional Activities/
Resources in
Instructor's Guide

1. Identify the class.
2. Write your placings at the top of the page.
3. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers.
4. Take notes on each animal to identify strong points and criticisms of each.
5. Take notes by pairs giving advantages as well as grants.

☑ **NOTE:** It is important to learn to take good notes in preparation for giving oral reasons for your placings. You may judge several classes in a day and give the reasons for your placings at a later time. By taking good notes, you can develop a good set of reasons. Write your notes in a 6-by-9-inch stenographer's spiral notebook, and use a pencil.

FIGURE 14



Duroc Gilt Reasons for Placing 4-1-2-3

Criticisms and Identification Points

1 Sandy-colored, shallow-bodied, tight-ribbed; narrow end to end

2 High-topped, steep-fronted, poor-moving

3 Light-muscled, narrow-made, fine-featured; least adaptable to confinement

4 Stiff-fronted

4/1 Wider-made, heavier-muscled, heavier-boned, longer-bodied; uniform under line

1/4 More mobile, leaner-designed

1/2 Exterior design; leveler-made, looser, give and flex to both front and rear legs

2/1 Deeper-bodied; depth at front and rear flank

2/3 Heavier-structured, stouter-featured, heavier-boned, larger-framed, trimmer, wider-made

3/2 Higher-quality; more evenly spaced underline

OBJECTIVE 14

Optional Activities/
Resources in
Instructor's Guide

Select from a list techniques for giving oral reasons for placings.

- Speak with a clear, powerful voice.
- Open the reasons with a precise opening statement.
- Never carry notes into the reason room.
- Stand erect, with feet aligned with shoulders.
- Stand 4 to 8 feet from the reason-taker.
- Talk in a firm voice without shouting.
- Use good voice control, both in speed and volume.

  ☑ **NOTE:** Emphasis on certain points is very important in giving reasons.

- Present the reason-taker with an accurate picture of the animal.
- Avoid body movement.

  ☑ **NOTE:** Some head movement is acceptable.

- Use identification characteristics whenever possible to let the reason-taker know that you did see the class.
- Look the reason-taker squarely in the eye.
- Stay within the allotted two minutes.

  ☑ **NOTE:** The reasons should last from one minute and twenty seconds to one minute and forty-five seconds.

- Avoid using more than three terms in succession.
- Never conclude reasons with, "For these reasons, I placed this class . . ."

OBJECTIVE 15

Arrange in order steps to follow in presenting oral reasons for placings.

Optional Activities/
Resources in
Instructor's Guide

☑ **NOTE:** A class of four animals is divided into three pairs: a top or initial pair, a middle or intermediate pair, and a bottom or concluding pair. The following examples are for a set of reasons for a placing of 1 - 2 - 3 - 4.

1. Present opening statement.

   EXAMPLE: Give the name of class and how it was placed. Give criticisms and outstanding good points.

   ☑ **NOTE:** In some cases, a general statement about the entire class may be more applicable.

2. Discuss the top pair.

   EXAMPLE: Give reasons for placing 1 over 2, using comparative terms. Give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1. Give criticisms of 2, using descriptive terms.

   ☑ **NOTE:** In close placings, several grants would be desirable as long as they are true. Always criticize an animal on its own merits rather than by comparing it to the animal placed above.

3. Discuss middle pair.

   EXAMPLE: Give reasons for placing 2 over 3 and give grants for 3 over 2. Give criticisms of 3.

4. Discuss bottom pair.

   EXAMPLE: Give reasons for placing 3 over 4, and give grants for 4 over 3.

OBJECTIVE 16 **Complete Assignment Sheet 2.**

OBJECTIVE 17 **Complete Assignment Sheet 3.**

OBJECTIVE 18 **Complete Assignment Sheet 4.**

OBJECTIVE 19 **Complete Assignment Sheet 5.**

OBJECTIVE 20	**Complete Assignment Sheet 6.**
OBJECTIVE 21	**Complete Assignment Sheet 7.**
OBJECTIVE 22	**Complete Assignment Sheet 8.**

Name ______________________________ Score __________

OBJECTIVE 11 **Compute placing scores.**

INTRODUCTION

There is a total of fifty possible points in a livestock class. Fifty points represents a perfect score. There are twenty-four possible placings on any given class. Before you judge a class, a group of selected officials will have already evaluated the class, determined the official placings, and identified the different cuts that each class should receive. The cuts are used to compute your score.

INSTRUCTIONS

Operation and Calculation
- Calculate with whole numbers

Math Application
- Solve word problems

Solve the following problems.

1. Class 1, Yorkshire gilts. Official placings are 3 - 2 - 1 - 4 with cuts of 4, 2, 2. You placed the class 2 - 3 - 4 - 1. What would be your correct score?

Your score ____

2. Class 2, Duroc boars. Official placings are 1 - 4 - 3 - 2 with cuts of 4, 4, 2. You placed the class 3 - 4 - 1 - 2. What would be your correct score?

Your score ____

3. Class 3, Berkshire gilts. Official placings are 3 - 1 - 4 - 2 with cuts of 5, 2, 2. You placed the class 3 - 4 - 2 - 1. What would be your correct score?

   Your score ______________________________

4. Class 4, market barrows. Official placings are 1 - 2 - 3 - 4 with cuts of 2, 4, 5. You placed the class 2 - 1 - 4 - 3. What would be your correct score?

   Your score ______________________________

ASSIGNMENT SHEET 2

SWINE BREEDS AND SELECTION

D3

Name ______________________________ Score __________

OBJECTIVE 16

Evaluate a set of written reasons for placing a class of swine.

INTRODUCTION

In writing reasons for placing classes of swine it is essential that you understand how the terms for desirable and undesirable traits are used and how they are tied together. You must also be able to evaluate placing reasons for clarity, correct style, and correctness.

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Draw conclusions
- Predict results/outcomes

Circle the terms for desirable traits, and underline the terms for undesirable traits in the set of written reasons below.

DUROC GILT REASONS

I preferred an alignment of 4-1-2-3 on this class of Duroc gilts, preferring 4, the heaviest-structured, widest-made gilt first. However, if I could change 4, I would like to see her more mobile off her front end.

Nonetheless, in my initial pair, 4 as compared to 1 was a wider-made gilt that exhibited more width between her blades and had more width and muscling to both rump and ham. In addition, 4 was a heavier-boned gilt with more circumference of forearm and scapula. Moreover, 4 was a longer-bodied gilt with a more uniformly spaced underline.

I will readily agree that 1, the sandy-colored gilt, was a more mobile, longer-strider gilt that was leaner-designed; however, I faulted 1 and placed her second as she was a shallow-bodied, tight-ribbed gilt that needed more thickness from end to end.

In my intermediate pair, I liked 1 over 2 due to 1's advantage in exterior design as she was a leveler-made, looser-appearing gilt that had more curvature and flex to her front end as well as more give and flex to her hock and pastern. One was also a wider-topped gilt that had more natural thickness to her loin and rump. Because of 1's advantage of looseness and mobility, she should be more adaptable to a wider variety of gestation regimes.

I will admit that 2 was a deeper-bodied gilt that had more depth to both fore and rear flank, as well as having more curvature of rib; however, I faulted 2 and preferred her third as she was a high-topped, steep-fronted gilt that lacked mobility off each end.

But now in my concluding pair I placed 2 over 3 as 2 was a much heavier-structured, stouter-made gilt that stood on more diameter of bone with more circumference to foot and forearm. Also 2 was a larger-framed, rawer-designed gilt that exhibited more natural width from end to end. Two also had a distinct advantage in volume as she was a deeper-bodied, looser-flanked gilt with a more convex rib shape.

I will definitely concede that 3 had the highest quality, most evenly spaced underline in the class; however, more importantly, 3 was the narrowest-made, lightest-muscled, finest-featured gilt in the class that would be the least adaptable to confinement situations.

Written by: Jarold Callahan
Instructor, Animal Science
Oklahoma State University

1. Are the reasons written in a clear, concise manner? ________
2. Did the reasons convince you that the class was placed correctly? ______________________________

   Justify your answer. ______________________________

   ____

   ____

   ____

   ____

   ____
3. Did the writer use standard terms for desirable and undesirable traits? ______________________________

4. Did you find any terms for desirable or undesirable traits that lacked meaning or purpose? ______

If so, name those terms.

______

______

______

______

5. Would you make changes in any of the placing reasons? ______

Write your changes. ______

______

______

______

______

6. Could the placing reasons be given in less than two minutes?

7. Would the reason-taker be able to identify the animals from the judge's reasons? ______

Why or why not? ______

______

______

______

______

ASSIGNMENT SHEET 3

SWINE BREEDS AND SELECTION

D3

Name ______________________________ Score __________

OBJECTIVE 17 **Evaluate characteristics of swine types.**

INTRODUCTION

The swine industry has gone through many changes over the years. These changes run in cycles, which vary from six to ten years. Several individuals impact on these changes.

The consumer of swine products is the primary individual who impacts on the changes. However, purebred producers also have some impact on the changes. When lard was of prime concern to the consumer, the swine producer produced a hog that was very fat. When the need for lard went away and the consumer wanted more lean, red pork, the swine producer started producing a leaner, more muscled hog. Some individuals referred to this type of hog as a *fat-free* animal. This swine type was popular from 1965 to 1976 and again in the 1980's and 1990's.

However they found that this "fat-free" type of animal did not adapt very well to total confinement. Such things as soundness, longevity, and durability became a problem. In 1977, the industry once again started making changes. Today producers are producing an animal referred to as a *production-type animal*, and evaluation is made equally on production traits and carcass traits.

INSTRUCTIONS

Evaluate the characteristics of each swine shown in the following pictures. List desirable and undesirable traits.

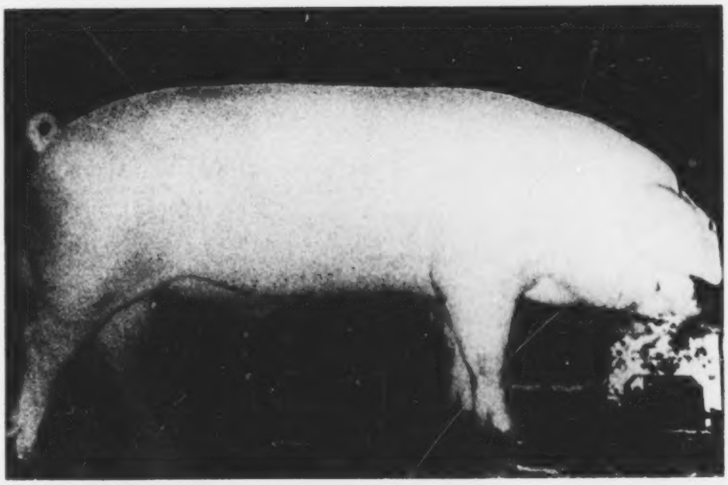
Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

1.

FIGURE 1

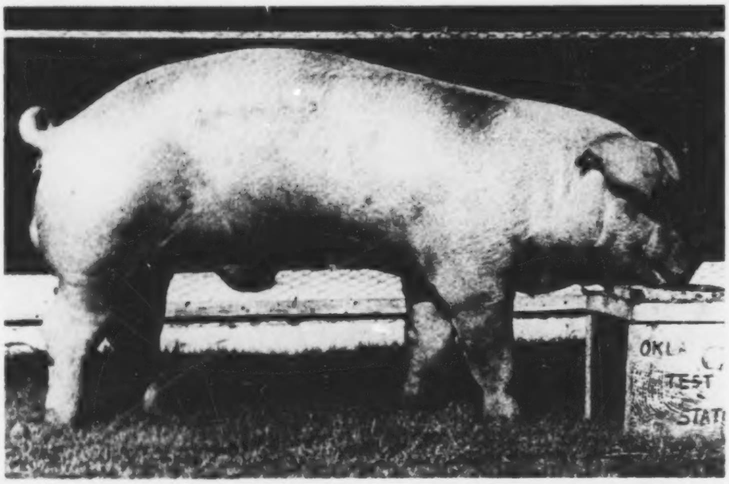


Courtesy: American Landrace Association, Inc.

Desirable Traits	Undesirable Traits
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

2.

FIGURE 2

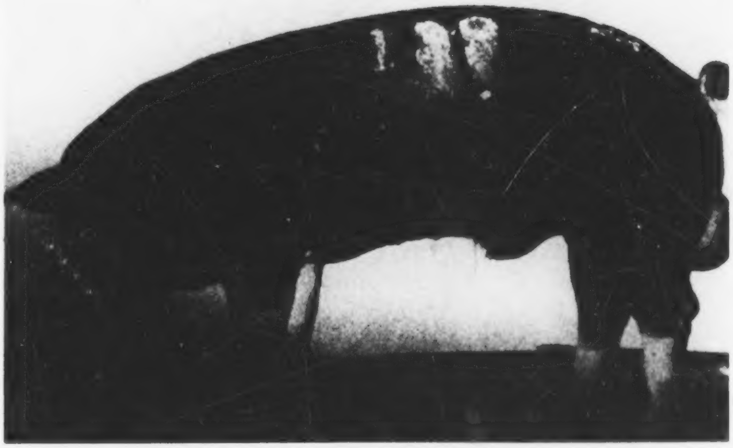


Courtesy: Oklahoma State University.

Desirable Traits	Undesirable Traits

3.

FIGURE 3

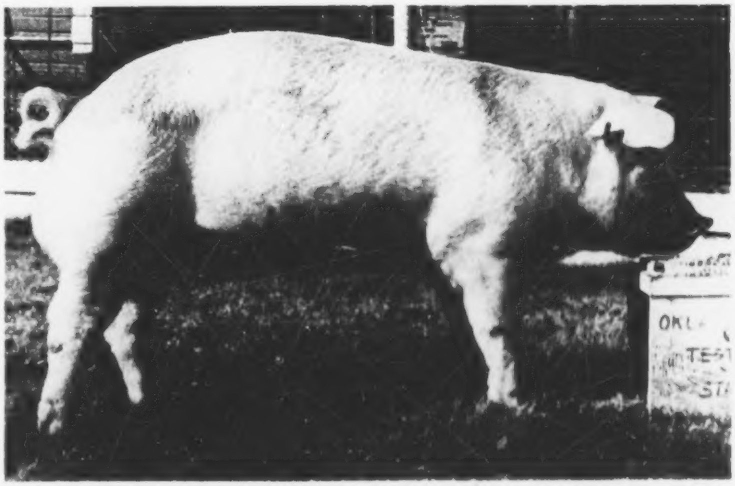


Courtesy: American Berkshire Association.

Desirable Traits	Undesirable Traits

4.

FIGURE 4



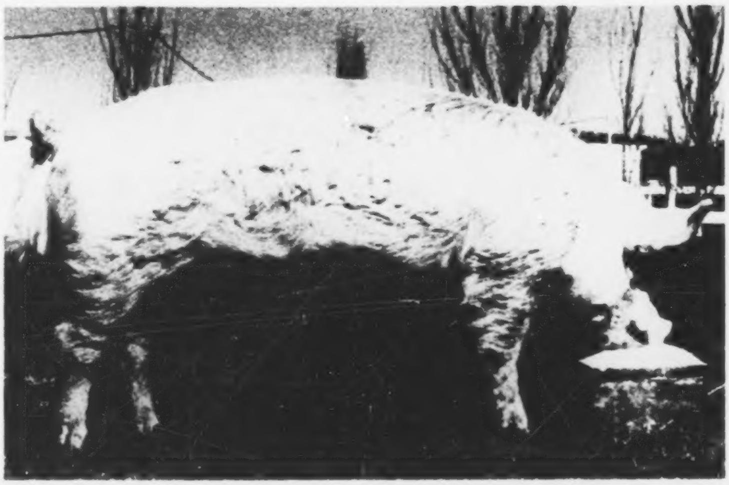
Courtesy: Oklahoma State University.

Desirable Traits

Undesirable Traits

5.

FIGURE 5

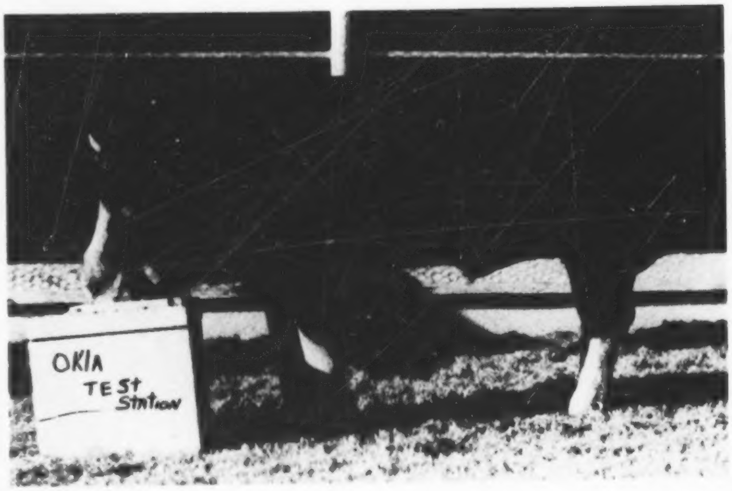


Courtesy: American Yorkshire Club.

Desirable Traits	Undesirable Traits

6.

FIGURE 6


OKlA
TEST
Station

Courtesy: Oklahoma State University

Desirable Traits	Undesirable Traits
____________________________	____________________________
____________________________	____________________________
____________________________	____________________________
____________________________	____________________________
____________________________	____________________________

ASSIGNMENT SHEET 4

SWINE BREEDS AND SELECTION

D3

Name ______________________________ Score __________

OBJECTIVE 18

Judge classes of market swine.

INSTRUCTIONS

Part 1

You are responsible for judging the pictured class of market swine. Study the class, write your placings in the blanks, and take notes on the class. Write your notes in the blanks provided.

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

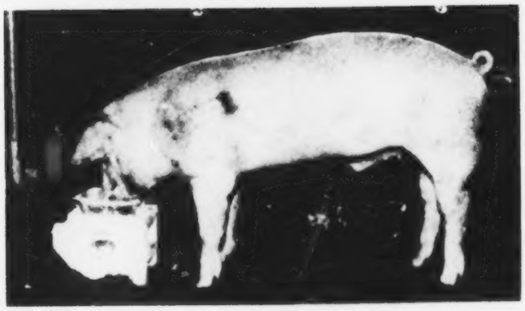
Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

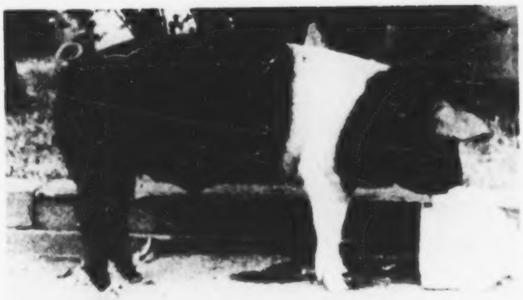
Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

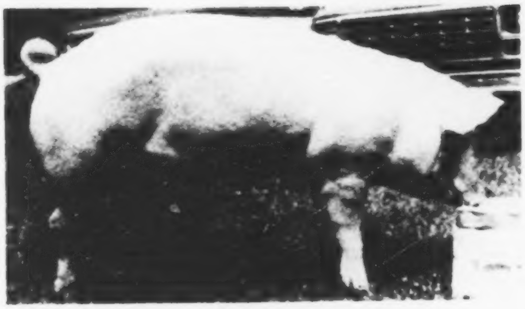
1

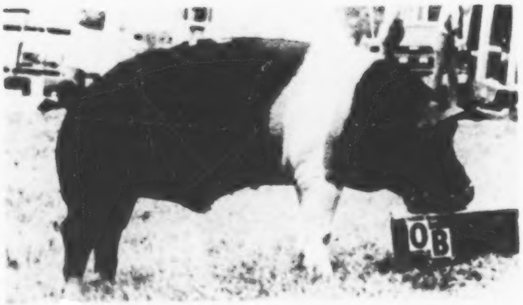




2

3





4

Courtesy: United Duroc Swine Registry.

Class name ______________________________ Placings ________

1. ____

2. ____

3. ____

4. ____

Part 2

Judge a class set up for you. Write your placings and take notes on the class.

Class name ______________________________ Placings ________

1. ____

____

____

____

____

____

2. ____

____

____

____

____

____

3. ____

____

____

____

____

____

4. ____

____

____

____

____

ASSIGNMENT SHEET 5

SWINE BREEDS AND SELECTION

D3

Name ______________________________ Score __________

OBJECTIVE 19 **Judge a class of breeding swine.**

INSTRUCTIONS The instructor or a junior or senior agricultural education student has already placed the officials on a breeding class of swine. You must now judge the class. Write your placings and take notes on the class.

Class name ________________________ Placings ________

Take notes on the class.

1. ____

____

____

____

____

2. ____

____

____

____

____

3. ____

____

____

____

____

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

4. ______________________________

____

____

____

____

ASSIGNMENT SHEET 6

SWINE BREEDS AND SELECTION

D3

Name ______________________________ Score __________

OBJECTIVE 20

Write sets of reasons for placing classes of swine.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 4
- Assignment Sheet 5

INSTRUCTIONS

Using the notes you took on previous Assignments Sheets, write your reasons for each class. After writing the reasons, go back through them. Determine if the reasons are convincing, whether the reasons separate the animals from each other, and whether you used appropriate judging terms.

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Composition
- Proofread and edit

Cognitive Activities
- Collect/record information
- Draw conclusions

Class name ____________________________ Placings ________

Class name ______________________ Placings ________

Class name ______________________ Placings ________

Class name ______________________ Placings ________

ASSIGNMENT SHEET 7

SWINE BREEDS AND SELECTION

D3

Name ______________________________ Score __________

OBJECTIVE 21

Give a set of oral reasons for placing a class of swine.

INTRODUCTION

Giving reasons orally takes a lot of practice. Your reasons should describe to the reason-taker just how you placed the class. In order to obtain a good score, you must convince the reason-taker that your placings are correct.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 6

INSTRUCTIONS

Select one of the previously written sets of reasons and be prepared to give the reasons orally. Read over your reasons several times. Do not attempt to memorize the reasons, just remember the good points of each animal and the grants. You should have a good opening statement. Stand in front of a mirror and practice your reasons several times.

1. For which class are you giving the reasons? ______________
2. How did you place the class? ______________________
3. What is your opening statement? ______________________

   ____
4. Do your reasons sound good? ______________________
5. Do your reasons grant one animal over another? __________
6. Do your terms tie into phrases? ____________________
7. Have you studied the reasons, and can you present them without using any of your notes? ________________

   ____

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Oral Presentation
- Use good speaking techniques
- Select/use words effectively
- Present appropriate appearance

Interactive Communications
- Give/follow oral directions
- Communicate with professional colleagues/associates

8. What is your closing statement? ______________________________

____

ASSIGNMENT SHEET 8

SWINE BREEDS AND SELECTION

D3

Name ______________________________ Score __________

OBJECTIVE 22

Use resource materials to locate information about swine breeds.

INTRODUCTION

Individuals may select one breed of animal over another for many reasons. The bottom line for most breed selection is personal preference. The breed associations and their members have worked hard to improve their breeds of swine. Many associations conduct research on feed conversion and carcass evaluation.

EQUIPMENT AND SUPPLIES

- Information received from breed associations
- Breed magazines and journals
- Other reference materials and books about swine breeds

INSTRUCTIONS

Answer the following questions about the breed you have selected for your research.

1. Breed ______________________________
2. Where did the breed originate? ____________________
3. What is the breed's color pattern? ____________________
4. What are some body and head characteristics of the breed?

____

____

____

____

____

____

Reading Comprehension
- Gain factual information
- Draw conclusions
- React to written material

Research and Reference
- Select useful resources
- Find materials in library
- Use standard references
- Use in-book reference tools
- Use magazines and newspapers

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Composition
- Use complete sentences

Research
- Take notes
- Outline material

Cognitive Activities
- Collect/record information
- Draw conclusions

5. What are considered to be some strong points of the breed?

6. What are considered to be some weak points of the breed?

7. When was the breed association for this breed formed? ______

8. What is the name and address of the breed association? ______

9. How many animals have been recorded in the breed association?

10. Who is presently serving as the breed secretary? ______

11. What is the name of the field person who serves your state?

12. Does the breed association sponsor a test? ______ If yes, where is it located?

13. Does the breed association publish a newsletter, journal, or magazine? ______

14. What is the name of the newsletter, journal or magazine?

15. How does the breed rate as a market hog?

16. Does the breed hang up a good, usable carcass?

17. What is the carcass length ________ Loin eye ________

18. What type of disposition does the breed have?

19. What is the average litter size?

20. Are the sows considered to be good milkers?

21. Are the boars active breeders?

22. How does the breed cross in a crossbreeding program?

23. What does the information say about growth rate?

24. What is your opinion of the breed?

25. If you were to go into the swine business, would you purchase this breed? ______________________

Justify your answer. ______________________

____

____

____

____

____

Agricultural Education I

Second Edition

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Student Workbook Part II

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Agricultural Education I

Second Edition

Student Workbook

Part 2

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Oklahoma Department of Vocational and Technical Education

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Unit 3 Record-Keeping Transactions C3-1
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Unit 5 Dairy Breeds and Selection D5-1
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OBJECTIVE SHEET

SHEEP BREEDS AND SELECTION

D4

INTRODUCTION

In 1992, sheep production in Oklahoma contributed over $5 million to the state's economy making it a profitable business. Oklahoma has year-round forage production. Fall lambing provides marketing of lambs during the peak of spring lamb prices. Wool production provides a substantial portion of income along with income from meat. Careful selection of breeding stock and assessment of existing pastureland and buildings can make sheep production a profitable enterprise.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS	
PREREADING:	Read *Starting a Sheep Enterprise* by Gerald Fitch, OSU Fact Sheet No. 3856.
WRITING:	Write a paper answering the nine questions listed at the beginning of the fact sheet. Use several sentences or paragraphs to answer each question.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Identify major breeds of sheep.
2. Label the parts of a sheep.
3. Select from a list the characteristics of the ideal market lamb.
4. List desirable characteristics of breeding sheep.
5. Label wholesale cuts of lamb with their proper names and desired percentages of total carcass yield.
6. Define livestock judging.
7. Match to their correct definitions terms associated with livestock judging.
8. Select from a list major factors to consider in judging breeding sheep.
9. Select from a list major factors to consider in judging market lambs.
10. Arrange in order the procedures to follow in handling sheep for judging.
11. List the areas of a lamb that have fat covering.
12. State procedures for catching sheep.
13. State procedures for holding sheep.
14. Distinguish between selected sheep-judging terms for desirable and undesirable traits.
15. State the purpose of the FFA placing card.
16. List the steps involved in computing placing scores.
17. Compute placing scores. (Assignment Sheet 1)
18. State the purpose of giving reasons for placings.
19. Arrange in order steps to follow in taking notes for oral reasons for placings.
20. Select from a list techniques for presenting oral reasons for placings.
21. Arrange in order steps to follow in presenting oral reasons for placings.

22. Evaluate a set of written reasons for placing a class of sheep. (Assignment Sheet 2)

23. Evaluate characteristics of a ewe. (Assignment Sheet 3)

24. Evaluate characteristics of a ram. (Assignment Sheet 4)

25. Evaluate market lambs. (Assignment Sheet 5)

26. Judge a class of market lambs. (Assignment Sheet 6)

27. Judge a class of breeding sheep. (Assignment Sheet 7)

28. Write a set of reasons for placing a class of sheep. (Assignment Sheet 8)

29. Give a set of oral reasons for placing a class of sheep. (Assignment Sheet 9)

30. Use resource materials to locate information about sheep breeds. (Assignment Sheet 10)

SHEEP BREEDS AND SELECTION

OBJECTIVE 1

Optional Activities/
Resources in
Instructor's Guide

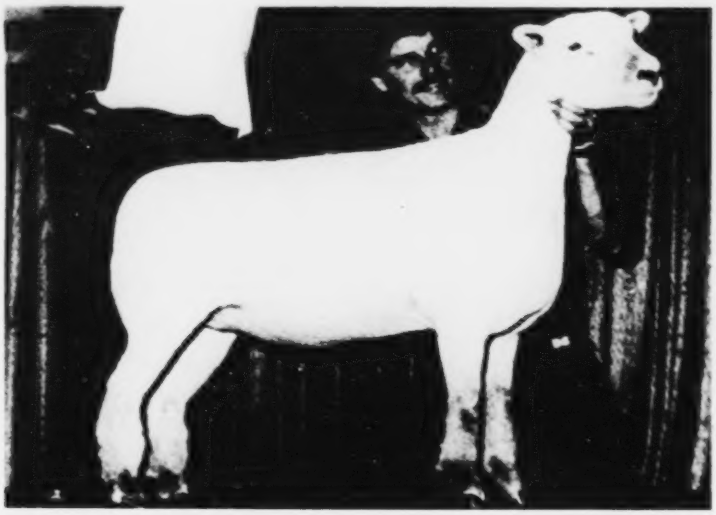
Identify major breeds of sheep.

WORDS YOU SHOULD KNOW	
meat breeds	breeds developed primarily for meat production, with little emphasis on wool production
wool breeds	breeds developed for wool production

☑ **NOTE:** These breeds are used for wool and meat, but mostly for meat.

- Southdown

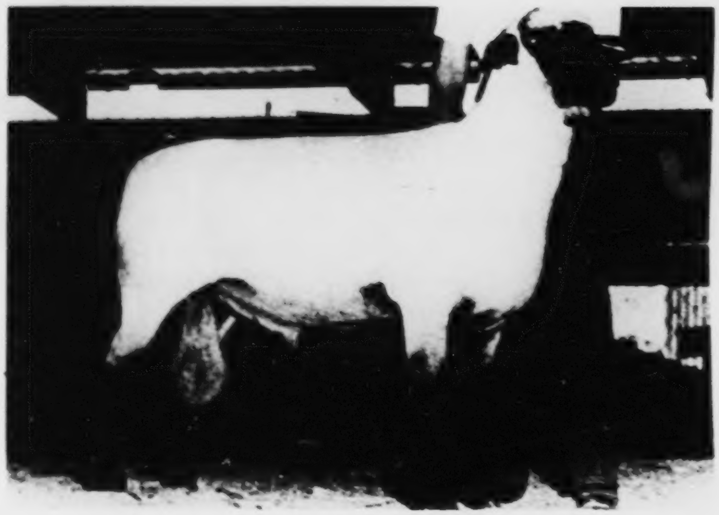
FIGURE 1



Courtesy: *Sheep Breeder*, Columbia, Missouri

- Hampshire

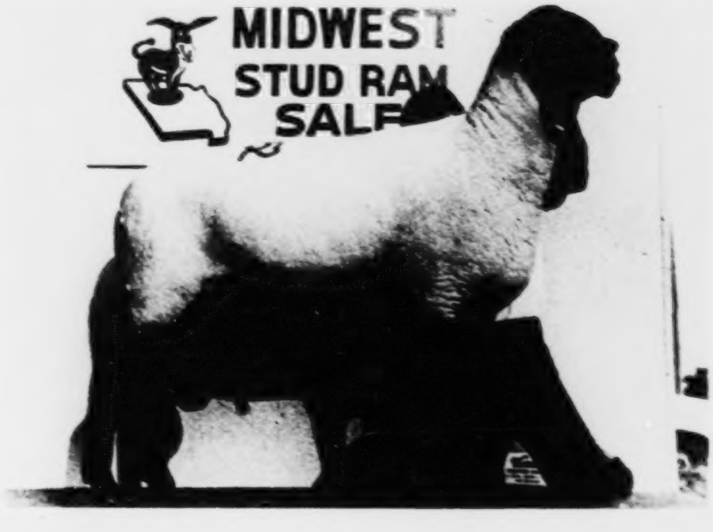
FIGURE 2



Courtesy: *Sheep Breeder*, Columbia, Missouri.

- Suffolk

FIGURE 3



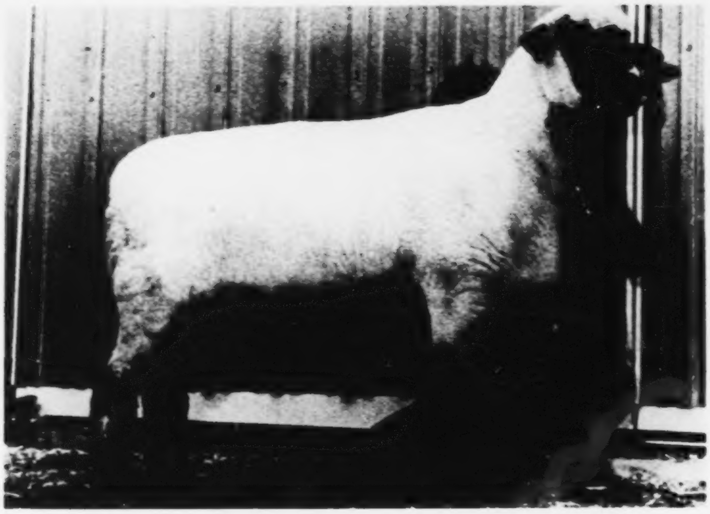
MIDWEST
STUD RAM
SALE

Courtesy: *Sheep Breeder*, Columbia, Missouri.

392

- Shropshire

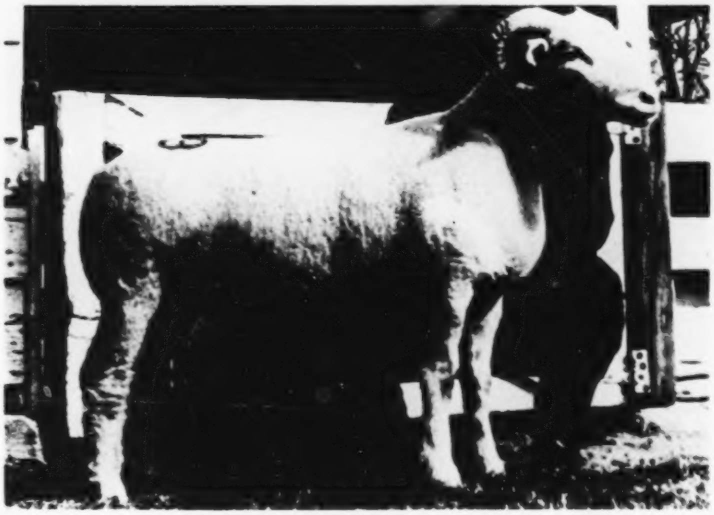
FIGURE 4



Courtesy: *Sheep Breeder*, Columbia, Missouri.

- Dorset

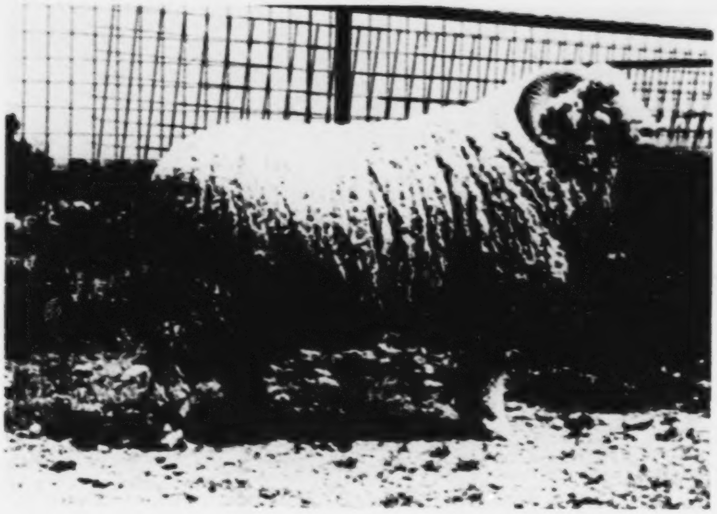
FIGURE 5



Courtesy: *Sheep Breeder*, Columbia, Missouri.

- Rambouillet

FIGURE 6



Courtesy: Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

OBJECTIVE 2

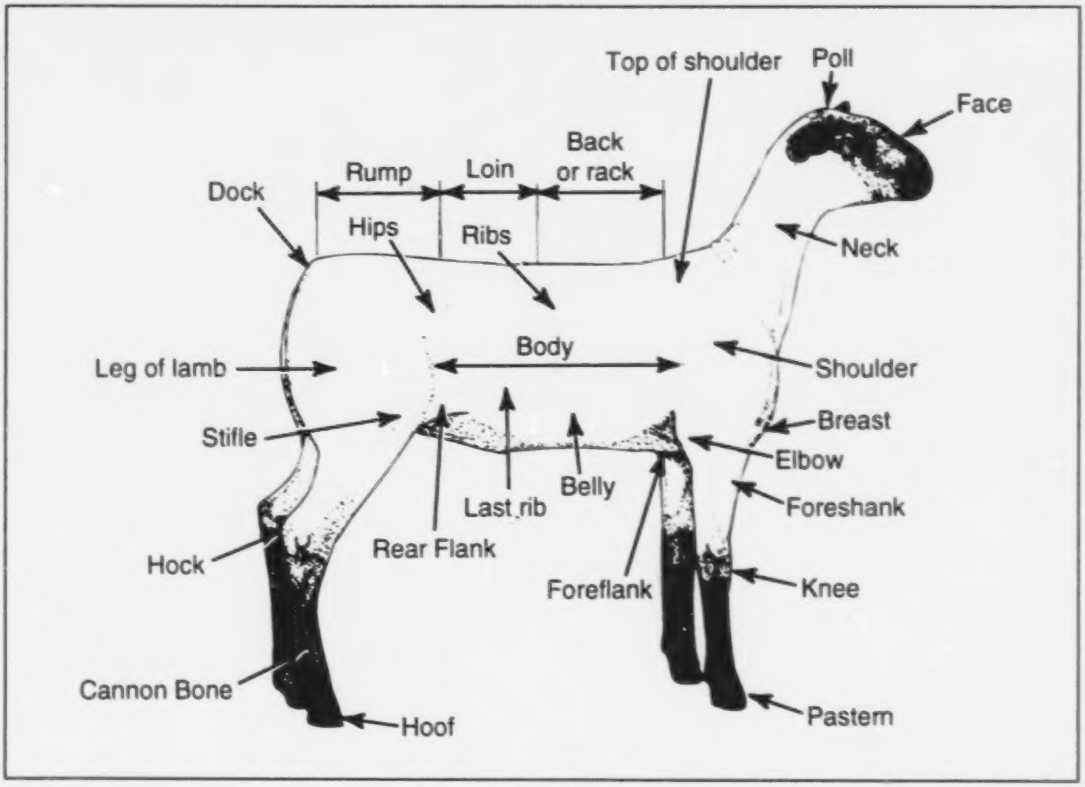
Required Activities/
Resources
- Transparency Master 1

Optional Activities/
Resources in
Instructor's Guide

Label the parts of a sheep.

You will see a transparency showing the parts of a sheep.

FIGURE 7


Top of shoulder
Poll
Face
Back or rack
Loin
Rump
Dock
Hips
Ribs
Neck
Body
Leg of lamb
Shoulder
Breast
Stifle
Elbow
Foreshank
Belly
Last rib
Rear Flank
Hock
Foreflank
Knee
Cannon Bone
Hoof
Pastern

OBJECTIVE 3

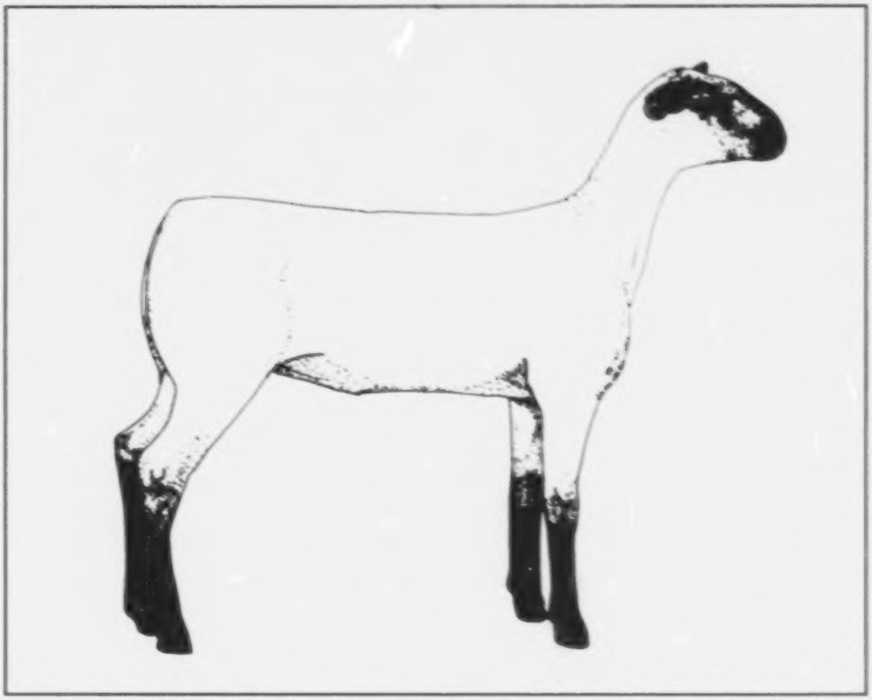
Required Activities/
Resources
- Transparency Master 2

Optional Activities/
Resources in
Instructor's Guide

Select from a list the characteristics of the ideal market lamb.

You will see a transparency showing the characteristics of a market lamb.

FIGURE 8



- Moderately long and tall
- Well-muscled
- Correct finish of 0.1 to 0.2 inch over rib eye
- Straight over top
- Long in loin and rump

  ☑ **NOTE:** Over 50 percent of the length should be posterior to the thirteenth rib.

- Clean and trim in neck and shoulder with tight skin
- Correct set of feet and legs

OBJECTIVE 4

Required Activities/
Resources
- Transparency Master 4

Optional Activities/
Resources in
Instructor's Guide

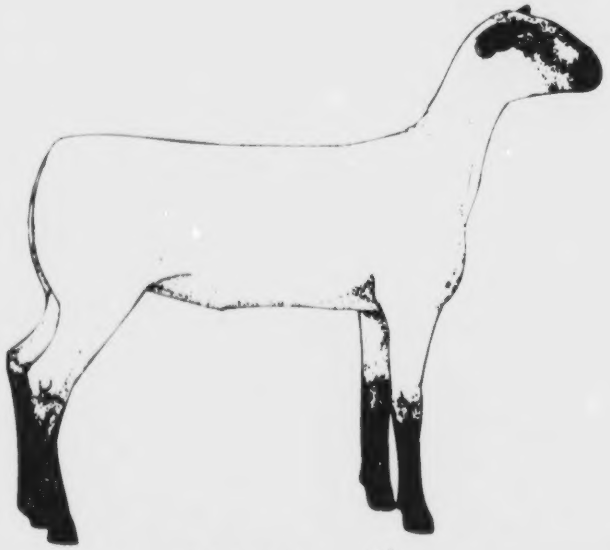
List desirable characteristics of breeding sheep.

You will see a transparency showing the characteristics of a market lamb.

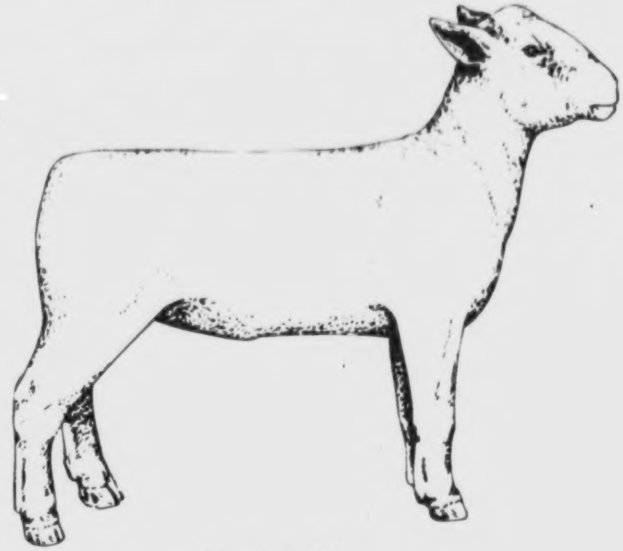
WORDS YOU SHOULD KNOW	
ewe	female sheep
purebred	animal whose ancestors are all of the same breed; may or may not be pedigreed
ram	mature male sheep

- Moderately long and tall
- Thick in muscling
- Straight over top
- Good on feet and legs
- Typical head of breed and sex
- Fleece relatively free of black or dark wool

FIGURE 9



Desirable



Undesirable

OBJECTIVE 5

Required Activities/Resources
- Transparency Master 3

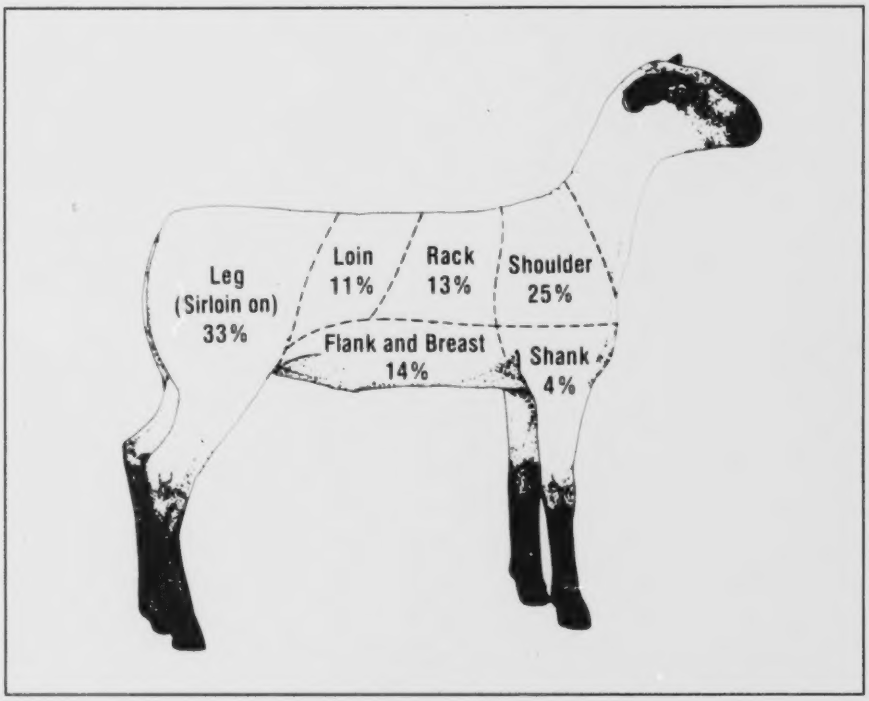
Optional Activities/Resources in Instructor's Guide

Label wholesale cuts of lamb with their proper names and desired percentages of total carcass yield.

You will see a transparency showing the wholesale cuts of lamb.

NOTE: Carcass quality and volume are very important. The carcass is composed of both high-priced and low-priced cuts.

FIGURE 10



OBJECTIVE 6

Optional Activities/Resources in Instructor's Guide

Define livestock judging.

- Analyzing carefully an animal's individual traits and comparing those traits to an ideal animal or standard

  NOTE: In a livestock judging contest, there are four animals in a class. Each of the four animals is analyzed individually and compared to other animals in the class.

OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

Match to their correct definitions terms associated with livestock judging.

- **balance** – blending of parts
- **breed character** – traits that distinguish one breed from another
- **eye appeal** – overall appearance of style, balance, and type in relation to an ideal
- **femininity** – traits distinguishing a female from a male
- **general appearance** – impression relative to an ideal, gained from looking at sheep from a distance of 25 to 30 feet
- **grant** – recognition that an animal has desirable traits, but that these traits are not acceptable to be used any higher in class
- **growthiness** – Condition of having appropriate size and weight for age
- **masculinity** – traits distinguishing a male from a female
- **meatiness** – high proportion of muscle volume in areas of high-priced cuts
- **quality** – overall smoothness, blending of shoulders, and refinement of head and bone
- **rugged** – having large bones and frame
- **scale** – size of an animal as determined by skeletal structure

  ☑ **NOTE:** Scale should be independent of weight.

- **sound** – correct on feet and legs
- **tight-framed** – ability of an animal to "hold itself together" as indicated by strength of top, tightness of shoulders, and squareness of feet and leg placement
- **trim** – free of excess finish or fat

- **type** – general term commonly defined as a combination of characteristics that make an animal useful for a specific purpose

  ☑ **NOTE:** Type is determined by the general form or shape of an animal.

OBJECTIVE 8

Optional Activities/ Resources in Instructor's Guide

Select from a list major factors to consider in judging breeding sheep.

- General appearance
- Type
- Quality
- Natural muscling
- Fleece
- Size and weight as related to age

OBJECTIVE 9

Optional Activities/ Resources in Instructor's Guide

Select from a list major factors to consider in judging market lambs.

- Type
- Finish

  ☑ **NOTE:** The finish is uniform, between 0.1 and 0.2 inches and is measured over the loin between the last two ribs.

- Muscling
- Dressing percent

OBJECTIVE 10

Required Activities/
Resources
– Demonstration

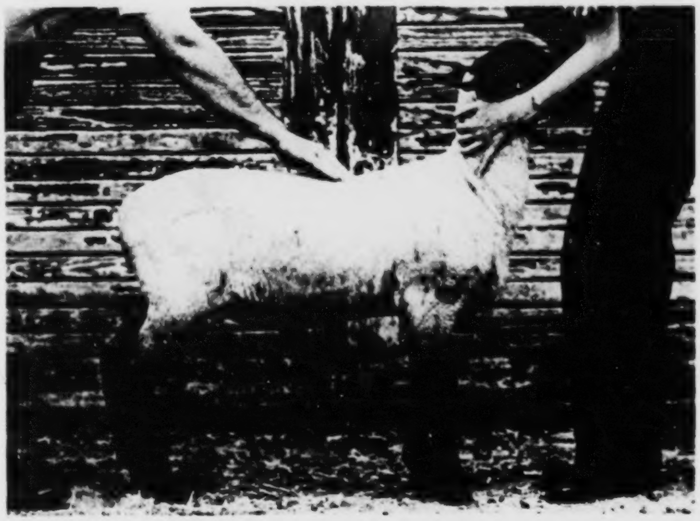
Optional Activities/
Resources in
Instructor's Guide

Arrange in order the procedures to follow in handling sheep for judging.

You will see a demonstration of how to handle sheep.

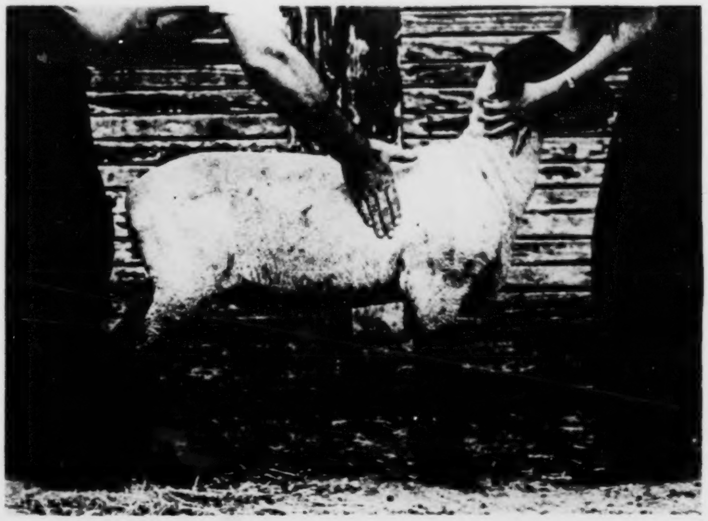
1. Check covering and strength of top from rump to top of shoulder.

FIGURE 11



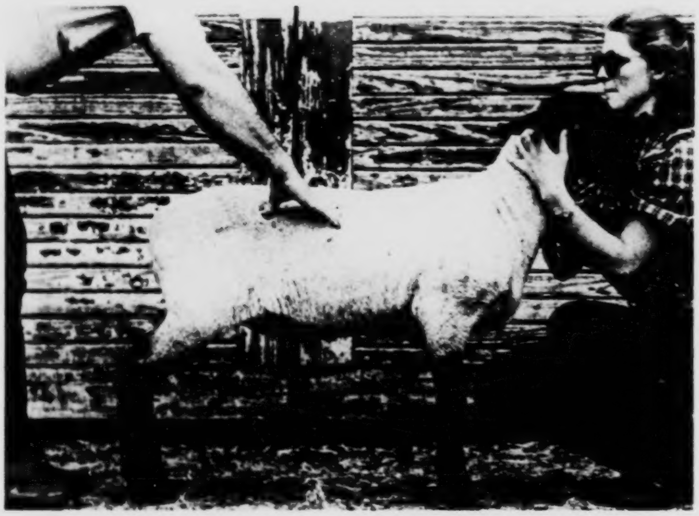
2. Check shoulder width and covering.

FIGURE 12



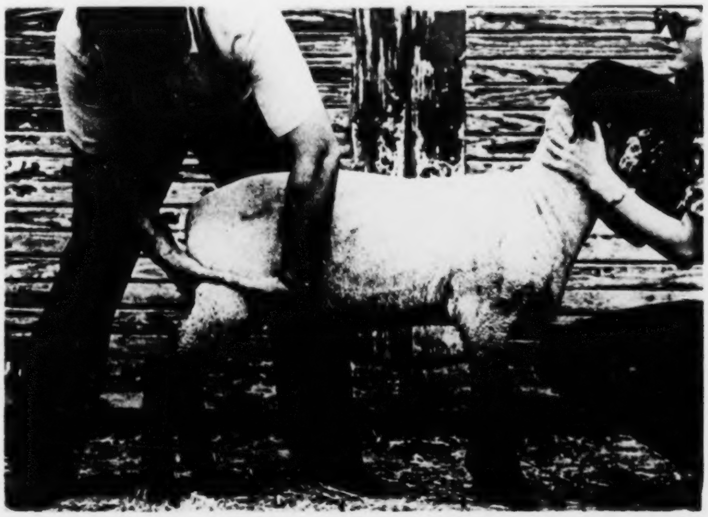
3. Check width and length of loin.

FIGURE 13



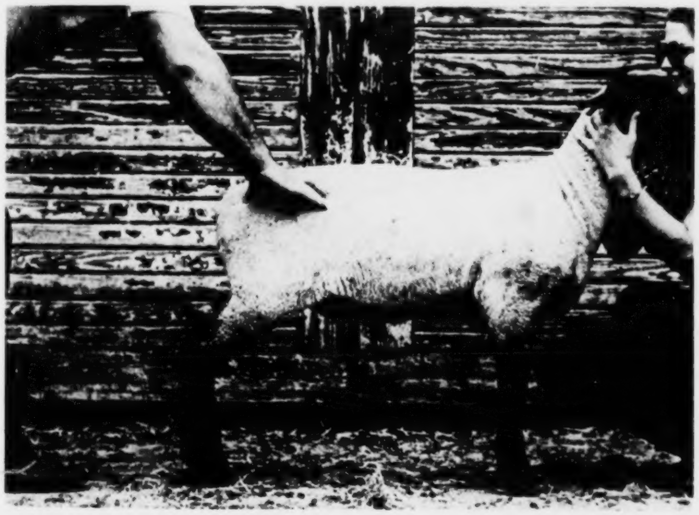
4. Check thickness of leg.

FIGURE 14



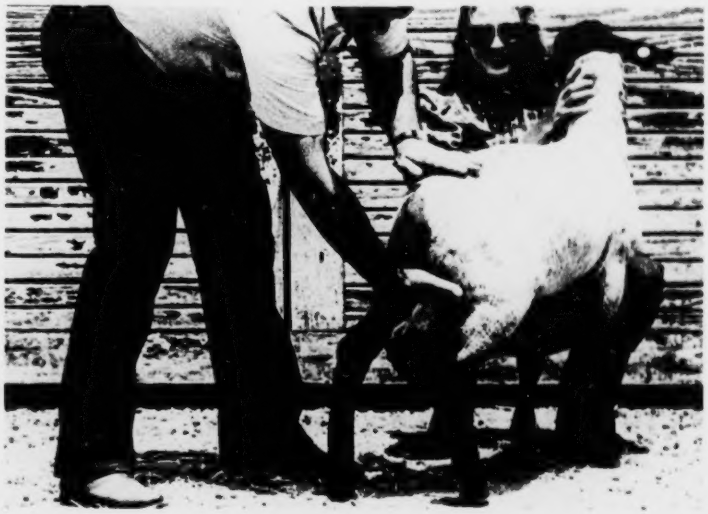
5. Check width and length of rump.

FIGURE 15



6. Check depth of twist.

FIGURE 16



OBJECTIVE 11

Optional Activities/
Resources in
Instructor's Guide

List the areas of a lamb that have fat covering.

- Ribs
- Back
- Loin

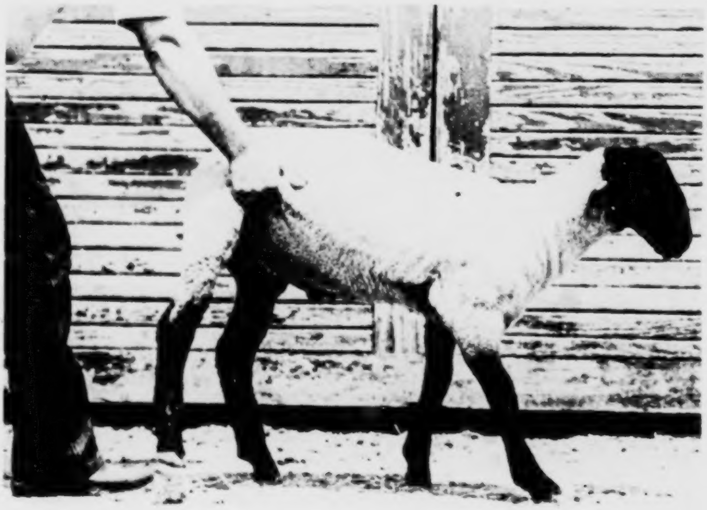
OBJECTIVE 12

Optional Activities/
Resources in
Instructor's Guide

State procedures for catching sheep.

1. Confine the animal in a small area.
2. Move quietly toward the animal.
3. Swiftly grasp the rear flank with your hand.

FIGURE 17



OBJECTIVE 13

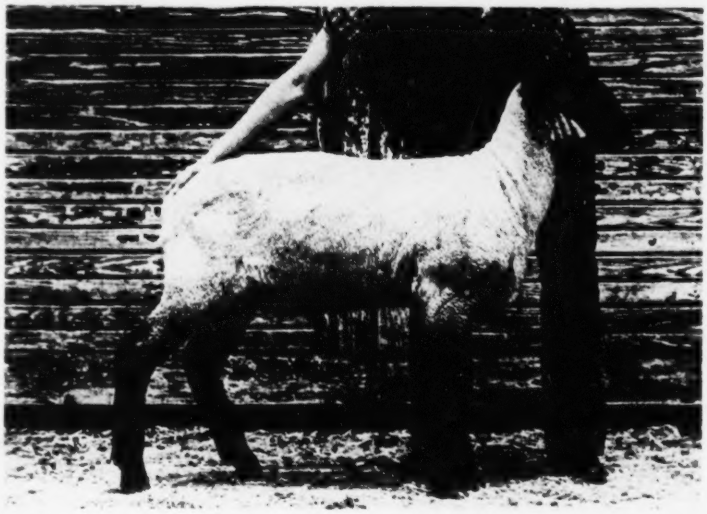
Optional Activities/
Resources in
Instructor's Guide

State procedures for holding sheep.

1. Grasp fold of flesh under lower jaw firmly with left hand.
2. Place right hand securely over dock.

☑ **NOTE:** The right hand in this position can be useful in moving the animal. As the animal quiets down, the right hand may be removed.

FIGURE 18



OBJECTIVE 14

Distinguish between selected sheep-judging terms for desirable and undesirable traits.

Optional Activities/
Resources in
Instructor's Guide

MARKET SHEEP

AREA	DESIRABLE	UNDESIRABLE
Size	A large, growthy lamb A tall, upstanding wether An extremely long-patterned lamb A lamb with a tremendous length of hindsaddle The largest-framed, longest-bodied lamb in the class	A short, conventional lamb A short, low-set wether A short-coupled lamb A short-hindsaddled lamb The shortest-bodied, earliest-maturing lamb in the class
Carcass	Yield a heavier-muscled carcass A meatier, more muscular carcass with a greater percent of weight in the hindsaddle Yield a trimmer, higher-cutability carcass A higher-dressing carcass with more fat cover A heavier-muscled, trimmer carcass with a lower numerical yield grade Yield a carcass with more leg and loin A heavier-muscled carcass with a larger leg conformation	A narrow, light-muscled carcass A light-muscled carcass with a low percent of hindsaddle A fat, low-cutability carcass An extremely low-dressing, bare-finished carcass A fat, light-muscled carcass with a high numerical yield grade A carcass with a low percent of leg and loin A narrow carcass with the lowest leg conformation score

BREEDING SHEEP

AREA	DESIRABLE	UNDESIRABLE
Size	A larger-framed, growthier ewe that certainly shows more size and scale A larger, stouter-made ewe that had more width to her chest floor, more spring to her forerib and more overall capacity A bigger, stretchier ewe that definitely had more length of hindsaddle, especially more length of rump and more total dimension to the leg A stouter-made ewe that had more substance and volume throughout, especially showing more width and depth of heart and overall spring of ribs A larger-framed, more upstanding ewe that had more evidence of future growth	A small, rather short-legged ewe that lacked growth potential A small, extremely refined ewe that was narrow in her chest floor and shallow-hearted A small, short-coupled ewe that was extremely short in the loin and hindsaddle A small-framed, light-boned ewe that was extremely narrow-chested and tight in her rib cage A small, early-maturing ewe

AREA	DESIRABLE	UNDESIRABLE
Size (continued)	A longer-bodied, heavier-boned ewe that showed more elevation and skeletal extension An extremely growthy, roomy-middled ewe that exhibited more size, scale, and volume An outstanding ewe because of her advantage in size, length and capacity	A small, conventionally patterned ewe that was extremely short coupled A narrow-made, tight-ribbed ewe A small-framed, short-hindsaddled ewe that lacked capacity and volume
Head	Showed more breed character about head More feminine-headed More masculine-headed (rams) More open-faced	Plain headed; lacked breed character Lacked femininity; coarse, masculine-headed Feminine-headed (rams) Wool-blind; too much wool cover on face
Suffolk head	Blacker about the head and ears Longer, cleaner, more feminine head Longer, more desirable set to the ears Longer with more flip to the ear	Brow about the head or ears Short and plain-headed Had short, erect ears Short-eared
Structure	A heavier-boned, straighter-legged, square-standing ewe A more upstanding, longer-legged ewe and definitely exhibited more structural correctness A larger-framed, heavier-boned ewe	A light-boned, crooked-legged ewe A rather short-legged ewe with a narrow set to her rear legs and was especially weak on her pasterns A small, fine-boned ewe that was incorrect on her feet and legs
Condition	An extremely overconditioned ewe A rather fat, overconditioned ewe A more nicely-conditioned ewe ☑ **NOTE**: For breeding sheep, condition should be mentioned only if very fat or very poor.	A rather poor, underconditioned ewe A poor, underconditioned ewe A fat overconditioned ewe ☑ **NOTE**: For breeding sheep, condition should be mentioned only if very fat or very poor.
Capacity	A smoother-fronted ewe that blended in smoother in the shoulder, had more width through the chest floor and more boldness to the rib A bigger-volumed ewe with more total capacity A deeper, wider-chested ewe, indicating more substance and volume	A narrow-chested ewe that was very coarse and prominent in her shoulders A tight-ribbed, narrow-fronted ewe that lacked capacity A ewe that was narrow through the forerib and extremely pinched in the heart

AREA	DESIRABLE	UNDESIRABLE
Muscling	A heavier-muscled ewe that certainly had more natural thickness down the top, especially over the loin, and had more volume of muscle to the leg	A rather light-muscled, narrow-topped ewe
	A stronger-topped, thicker-muscled ewe that was especially longer-rumped and thicker through the leg	A narrow-made, short-rumped ewe that was easy in her top
	A ewe that certainly displayed more natural thickness throughout, especially more total dimensions of leg	A slack-framed, light-muscled ewe that was extremely narrow down the top
	A heavier-muscled ewe with an exceptional top and overall fullness to the leg	A short-rumped, light-legged ewe
	A nicer-balanced, thicker-made ewe with an exceptional volume through the rump and leg	A poorly balanced ewe that definitely dropped in the rump and had the shallowest leg in the class
	A leg that displayed more muscling down the top, showed more flare to the rump, and especially more depth and thickness to the leg	A light-muscled ewe that was narrow and tapering in the rump, low in the pins, and stood rather narrow behind
Quality, balance, femininity	A higher-quality, nicer-balanced ewe with more Hampshire breed character about the head	A plain, low-quality ewe that lacked good breed character
	A more feminine-headed ewe that was especially freer of wool about the eye	A rather coarse-headed ewe that was certainly carrying too much wool around the eye
	A longer-necked, cleaner-fronted ewe	A short-necked, heavy-fronted ewe
	A typier ewe with more eye appeal	A rather plain, off-type ewe
	A longer, smoother-necked ewe	A short-necked, heavy-fronted ewe
	An extremely stylish ewe that exhibited smoothness and quality	A plain ewe that was rather coarse
	A neater-fronted ewe	A coarse-fronted ewe
	A smoother-shouldered ewe	A coarse, open-shouldered ewe
	A nicer-balanced, more stylish ewe that certainly had more Suffolk breed character	A poorly-balanced, coarse-headed ewe
Fleece	A longer, denser fleece	A short, open-fleeced ewe
	A more uniform, denser-fleeced ewe freer of black fibers	A coarse, open-fleeced ewe with excessive black fibers

OBJECTIVE 15

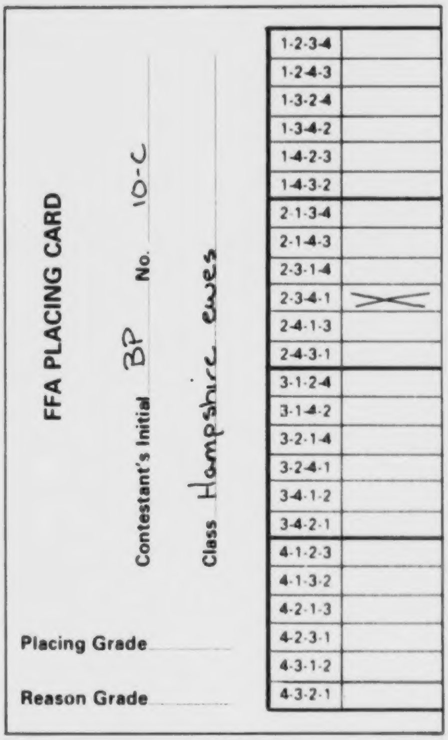
Optional Activities/ Resources in Instructor's Guide

State the purpose of the FFA placing card.

- Identify the judge
- Record the placing
- Relate to officials how the class was placed

☑ **NOTE:** Fill out the card in pencil, and write clearly. An incorrectly written card can cause a team to lose a contest.

FIGURE 19



FFA PLACING CARD

Contestant's Initial BP **No.** 10-C

Class Hampshire ewes

Placing Grade

Reason Grade

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	
2-3-1-4	
2-3-4-1	X
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

OBJECTIVE 16

Optional Activities/ Resources in Instructor's Guide

List the steps involved in computing placing scores.

☑ **NOTE:** There are always four animals in a livestock class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.

1. Compare your placings to official placings.

EXAMPLE: Official Placings — Your placings

2 - 4 - 3 - 1 — 2 - 3 - 1 - 4
2 3 2 (cuts)

2. Write your placings as pairs.

EXAMPLE: 2/3 3/1 1/4

2/1 3/4

2/4

3. Use cuts to calculate points.

   a. Compare each pair you placed to the corresponding pair in the official placing.

   b. Count zero points for each matching pair.

   c. Count points for pairs that do not match by adding cuts that fall between the paired numbers.

   d. Total the points for all pairs.

EXAMPLE:

Official Placings — Your placings

2 - 4 - 3 - 1 — 2 - 3 - 1 - 4
2 3 2 (cuts)

2/3 = 0 points 3/1 = 0 points 1/4 = 2 + 3 = 5 points

2/1 = 0 points 3/4 = 3 points

2/4 = 0 points

Total of points = 3 + 5 = 8

4. Subtract total points from 50 to find placing score.

EXAMPLE: Subtract 8 points from 50 points = 42 points

Your score = 42

☑ **NOTE:** If the class had placed 4 - 2 - 3 - 1, there would have been a top switch, which would have cost two points, making your score 48 points. If 4 and 1 had been switched, it would have cost 10 points, making your score 40 points.

OBJECTIVE 17

Complete Assignment Sheet 1

OBJECTIVE 18

State the purpose of giving reasons for placings.

Optional Activities/
Resources in
Instructor's Guide

- To present your opinion and justification for placing a class of livestock

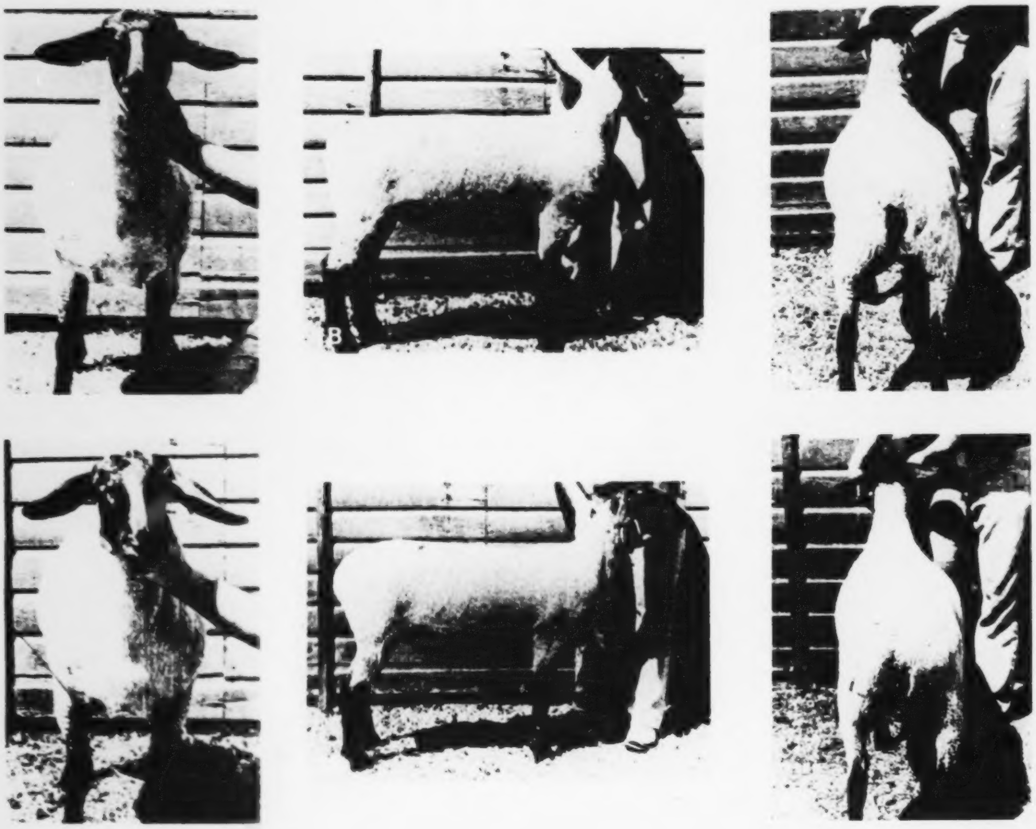
Official Reasons for Placing Suffolk Ewe Lambs

This class of Suffolk ewe lambs is placed 1 - 2 - 3 - 4, and is actually a two-pair class. A top pair of longer, taller, more structurally correct ewes and a close bottom pair of smaller-framed ewes with obvious differences in muscle structure and skeletal framework.

Top Pair (Figure 20)

Lamb #1 places over #2 as she is a heavier-muscled, straighter-lined, more nicely balanced ewe lamb. In addition, she is a stouter-made lamb, standing on more substance of bone. Number 1 also has a longer and squarer-made rump, and when viewed from the rear, exhibits more total volume and dimension of muscling. She is meatier through the center portion of her leg and carries her muscling down closer to her hock. However, the #2 ewe lamb is more feminine about her head, as she is longer from poll to muzzle, and is more refined about the bridge of her nose.

FIGURE 20

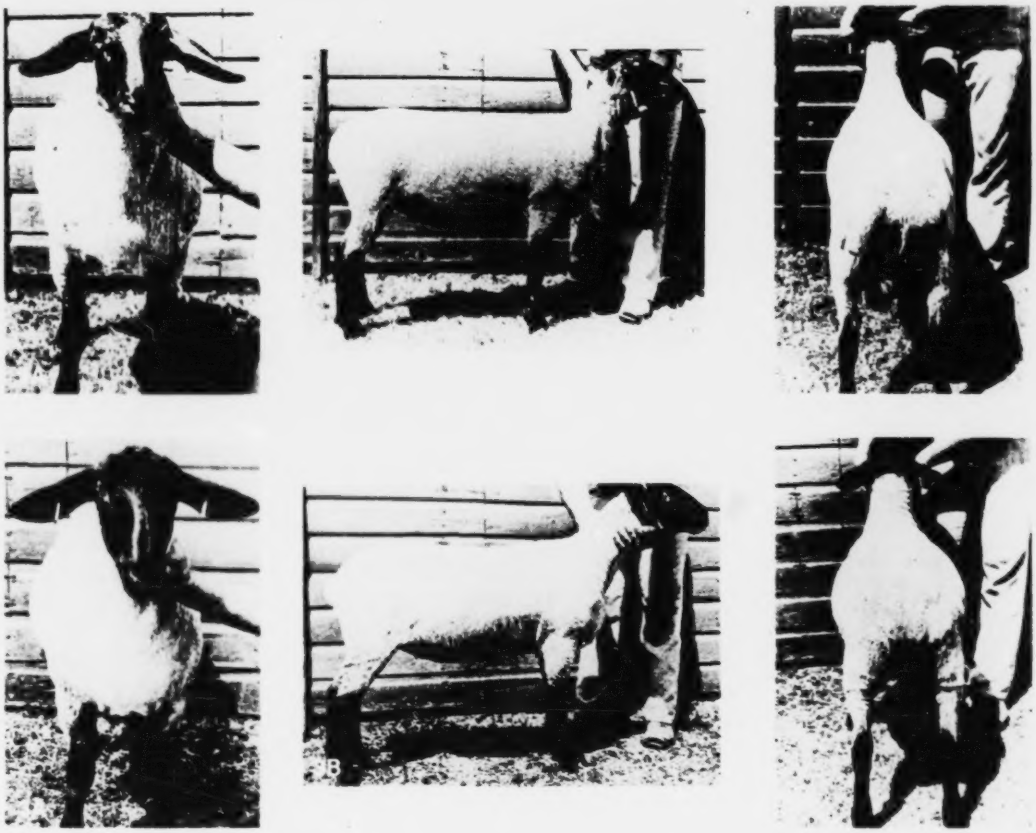


Courtesy of National Suffolk Sheep Association, Columbia, Missouri.

Middle Pair (Figure 21)

Lamb #2 easily places over #3 in the middle pair, as she is simply a bigger-framed, more capacious ewe. She stands on more length of leg and is a bolder-fronted, deeper-ribbed ewe. When viewed from the side, she exhibits more length of body, being especially longer through her loin and rump. In addition, she is leveler in her rump structure and possesses an advantage in muscling through the center and lower portion of her leg. Number 2 also reveals more Suffolk breed type and character as evidenced by a longer ear and a smoother, more-refined head. She also stands more correctly on her rear feet and legs, criticizing #3 for being weak on her pasterns.

FIGURE 21



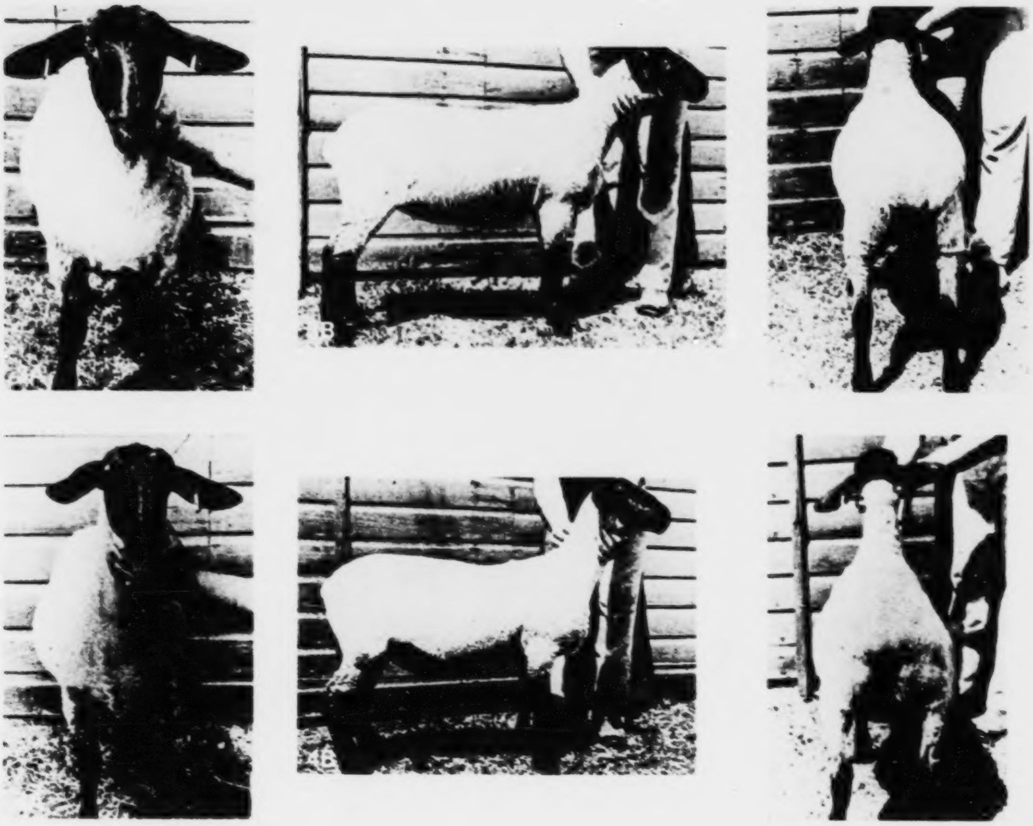
Courtesy of National Suffolk Sheep Association, Columbia, Missouri

Bottom Pair (Figure 22)

In a very close placing, #3 places over #4 in the bottom pair. Number 3 is a taller-fronted, later-maturing ewe that is stronger-topped and more structurally correct in her rear leg placement, criticizing #4 for standing sickle-hocked. When viewed down her top, #3 reveals an advantage in spring of both fore and rear rib. It should be noted, however, that #4 is meatier down her top and exhibits more total volume and dimension of muscle throughout her rump and leg. She also excels #3 in Suffolk breed type and femininity about her head.

However, #4 places last, as she is the smallest-framed, earliest maturing, most structurally incorrect ewe in the class. She simply lacks the style, balance, and skeletal framework and dimension to place any higher.

FIGURE 22



Courtesy of National Suffolk Sheep Association, Columbia, Missouri

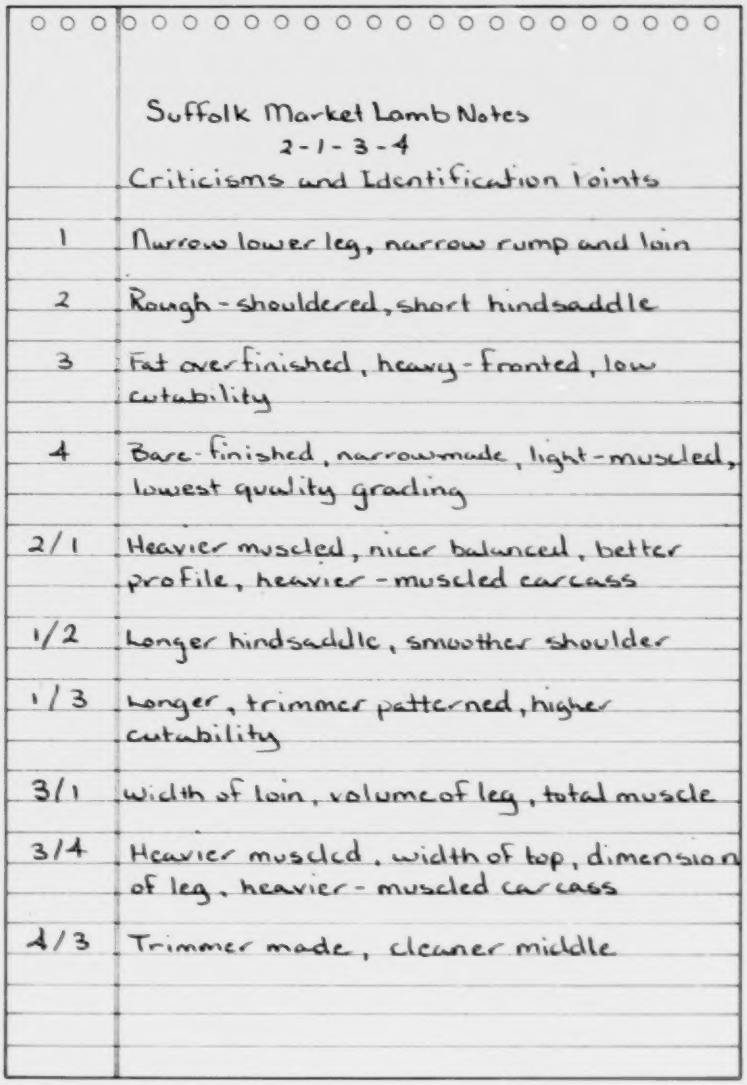
OBJECTIVE 19

Optional Activities/
Resources in
Instructor's Guide

Arrange in order steps to follow in taking notes for oral reasons for placings.

1. Identify the class.
2. Write your placings at the top of the page.
3. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers.
4. Take notes on each animal to identify the strong points and criticisms of each.
5. Take notes by pairs giving advantages as well as grants.

FIGURE 23



Suffolk Market Lamb Notes
2-1-3-4
Criticisms and Identification Points

1	Narrow lower leg, narrow rump and loin
2	Rough-shouldered, short hindsaddle
3	Fat overfinished, heavy-fronted, low cutability
4	Bare-finished, narrowmade, light-muscled, lowest quality grading
2/1	Heavier muscled, nicer balanced, better profile, heavier-muscled carcass
1/2	Longer hindsaddle, smoother shoulder
1/3	Longer, trimmer patterned, higher cutability
3/1	width of loin, volume of leg, total muscle
3/4	Heavier muscled, width of top, dimension of leg, heavier-muscled carcass
4/3	Trimmer made, cleaner middle

BEST COPY AVAILABLE

☑ **NOTE:** The following set of written reasons was developed from the notes given in Figure 23.

SUFFOLK MARKET LAMBS

I preferred an alignment of 2-1-3-4 on this class of Suffolk market lambs, starting with the most powerfully muscled, nicest-balanced lamb in the class. However, if I could change 2, I would like to see him flatter and smoother through his shoulder. Nevertheless, I still selected 2 over 1 in my initial pair, mainly due to 2's distinct advantage in muscle, as 2 did show more shape and expression of muscle down his top, was wider and deeper over his loin, showed more expression of muscle out his rump, and had a fuller, plumper leg. In addition, 2 also was a much more attractive, higher-profiling lamb that was straighter and stronger down his top and blended more smoothly from front to rear. And, therefore, due to 2's advantage in muscle, he should yield the heaviest muscled carcass with the highest leg conformation score. I admit that 1 was a longer-hindsaddled lamb that was smoother through his shoulder; however, I criticize 1 and preferred to place him second because he lacked the total muscle expression of my first-place lamb.

Now, in moving to my middle pair, I still liked 1 over 3 mainly because 1 was a longer, cleaner-patterned lamb that was especially longer through his loin and rump. Likewise, 1 was a more correctly finished lamb that was more optimum in his fat cover down his top and over his rack; and thus, due to 1's extreme advantage in length of hindsaddle and trimness, 1 should yield a higher-cutability carcass with a higher percent hindsaddle. I readily concede that 3 did show more width over his loin and exhibited more volume of muscle to his leg; however, I fault 3 and preferred to place him third as he was an overfinished lamb that was wasty through his lower one-third and was heavy-fronted.

But at the same time, I still chose to place 3 over 4 in my final and concluding pair, as 2 was a much heavier-muscled, thicker-made lamb that possessed more muscle shape down his top and definitely had more width and dimension of muscle through his rump and down into leg. Therefore, due to 3's dominating advantage in muscle, he should hang a much heavier-middled carcass; however, this works to 4's disadvantage as 4 was an extremely underfinished lamb that narrowed down his top and tapered through his leg. Therefore, due to 4's disadvantage in muscle and finish, he should yield the lightest muscled carcass with the lowest probability of grading "choice."

Written by: Jarold Callahan
Instructor, Animal Science
Oklahoma State University

OBJECTIVE 20

Optional Activities/
Resources in
Instructor's Guide

Select from a list techniques for presenting oral reasons for placings.

- Speak with a clear, powerful voice.
- Open reasons with a precise opening statement.
- Never carry notes into the reason room.
- Stand erect, with feet aligned with shoulders.
- Stand 4 to 8 feet from the reason-taker.
- Talk in a firm voice, without shouting.
- Use good voice control, both in speed and volume.

  ☑ **NOTE:** Emphasis on certain points is very important in giving reasons.

- Present the reason-taker with an accurate picture of the animal.
- Avoid body movement.

  ☑ **NOTE:** Some head movement is acceptable.

- Use identification characteristics whenever possible to let the reason-taker know that you did see the class.
- Look the reason-taker squarely in the eye.

- Stay within the allotted two minutes

  ☑ **NOTE:** The reasons should last from one minute and twenty seconds to one minute and forty-five seconds.

- Avoid using more than three terms in succession

- Never conclude reasons with, "For these reasons, I placed this class . . ."

OBJECTIVE 21

Optional Activities/ Resources in Instructor's Guide

Arrange in order steps to follow in presenting oral reasons for placings.

☑ **NOTE:** A class of four animals is divided into three pairs: a top or initial pair, a middle or intermediate pair, and a bottom or concluding pair. The following examples are for a set of reasons for a placing of 1 - 2 - 3 - 4.

1. Present opening statement.

   EXAMPLE: Give the name of class and how it was placed. Give criticisms and outstanding good points.

   ☑ **NOTE:** In some cases, a general statement about the entire class may be more applicable.

2. Discuss the top pair.

   EXAMPLE: Give reasons for placing 1 over 2, using comparative terms. Give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1. Give criticisms of 2, using descriptive terms.

   ☑ **NOTE:** In close placings, several grants would be desirable as long as they are true. Always criticize an animal on its own merits rather than by comparing it to the animal placed above.

3. Discuss middle pair.

   EXAMPLE: Give reasons for placing 2 over 3 and give grants for 3 over 2. Give criticisms of 3.

4. Discuss bottom pair.

   EXAMPLE: Give reasons for placing 3 over 4, and give grants for 4 over 3.

OBJECTIVE 22	**Complete Assignment Sheet 2.**
OBJECTIVE 23	**Complete Assignment Sheet 3.**
OBJECTIVE 24	**Complete Assignment Sheet 4.**
OBJECTIVE 25	**Complete Assignment Sheet 5.**
OBJECTIVE 26	**Complete Assignment Sheet 6.**
OBJECTIVE 27	**Complete Assignment Sheet 7.**
OBJECTIVE 28	**Complete Assignment Sheet 8.**
OBJECTIVE 29	**Complete Assignment Sheet 9.**
OBJECTIVE 30	**Complete Assignment Sheet 10.**

ASSIGNMENT SHEET 1

SHEEP BREEDS AND SELECTION

D4

Name ______________________________ Score __________

OBJECTIVE 17

Compute placing scores.

INTRODUCTION

In each livestock class there is a total of 50 possible points, with a score of 50 being perfect. There are twenty-four possible placings on any given class. Prior to your judging the class, a group of selected officials will have already evaluated the class, determined the official placings, and identified the different cuts that each class should receive. The cuts are used to compute your score.

INSTRUCTIONS

Operation and Calculation
- Calculate with whole numbers

Math Application
- Solve word problems

Work the following problems.

1. Class 1, Dorset ewes. Official Placings are 4 - 1 - 3 - 2 with cuts of 4, 2, 2. You placed the class 2 - 3- 4 - 1. What is your placing score?

   Your score = ________________

2. Class 2, market lambs. Official placings are 1 - 4 - 3 - 2 with cuts of 4, 4, 2. You placed the class 1 - 3 - 4 - 2. What is your placing score?

   Your score = ________________

3. Class 3, Hampshire rams. Official placings are 4 - 3 - 1 - 2 with cuts of 5, 2, 2. You placed the class 3 - 4 - 2 - 1. What is your placing score?

   Your score = ________________

4. Class 4, Southdown ewes. Official placings are 1 - 2 - 3 - 4 with cuts of 2, 4, 5. You placed the class 3 - 1 - 4 - 2. What is your placing score?

   Your score = ________________

ASSIGNMENT SHEET 2

SHEEP BREEDS AND SELECTION

D4

Name ______________________________ Score __________

OBJECTIVE 22

Evaluate a set of written reasons for placing a class of sheep.

INTRODUCTION

In writing reasons for placing classes of sheep it is essential that you understand how the terms for desirable and undesirable traits are used and how they are tied together. You must also be able to evaluate placing reasons for clarity, correct style, and correctness.

INSTRUCTIONS

Circle the terms for desirable traits, and underline the terms for undesirable traits in the set of written reasons below.

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Draw conclusions
- Predict results/outcomes

REASONS FOR PLACING SUFFOLK EWES

In placing the Suffolk ewes 4-3-2-1, I preferred the largest, biggest-volumed, thickest ewe in the class. But if I could change 4, I would like to see her stronger-topped.

Nevertheless, in the top pair, 4 as compared to 3 was a bigger-framed, growthier ewe, that stood on more length of cannon. Also 4 was a thicker-topped, heavier-muscled ewe, with more total volume of muscle to her leg. Furthermore, she was a deeper-bodied ewe with more width of chest. I'll be the first to admit 3 was a more feminine ewe with more length of neck and also was stronger topped. But I fault her and placed her second as she was a short-bodied, heavy-conditioned ewe.

Coming to my middle pair, I selected 3 over 1. Three certainly was a more attractive, straighter-lined ewe that was leveler-rumped and did stand wider on both front and rear. Moveover, she was blacker about her points and did exhibit more Suffolk breed character. I realize that 1 was a more elevated, longer-patterned ewe, but at the same time, she was a fine-boned, buckkneed ewe that stood close at her hocks. Also, 1 was a high-loined ewe that was steep out her rump.

In closing with my bottom pair, I felt 1 was a bigger-outlined, longer-patterned ewe that excelled 2 in length of hindsaddle. In addition, she was a more feminine-fronted, flatter-shouldered ewe that was longer-necked and did have a longer, more refined face with a more correct ear setting. I concede 2 was a heavier-boned, straighter-lined ewe, but I penalized her and place her last as she was a small-framed, short-bodied ewe. Also she was a plain-headed, short-eared ewe, that was the most conventional in the class.

1. Are the reasons written in a clear, concise manner? ________

2. Did the reasons convince you that the class was placed correctly? ________________________

   Justify your answer. ________________________

   ____

   ____

3. Did the writer use correct terms for desirable and undesirable traits? ________________________

4. Did you find any terms for desirable or undesirable traits that lacked meaning or purpose? ________________

   If so, name them. ________________________

   ____

   ____

5. Would you make changes in any of the placing reasons? ____

   Write your changes. ________________________

   ____

   ____

6. Could the placing reasons be given in less than two minutes?

7. Would the reason-taker be able to identify the animals from the judge's reasons? ________________________

   Why or why not? ________________________

   ____

   ____

   ____

ASSIGNMENT SHEET 3

SHEEP BREEDS AND SELECTION

D4

Name ______________________ Score __________

OBJECTIVE 23

Evaluate characteristics of a ewe.

INSTRUCTIONS

Evaluate the characteristics of each ewe shown in the following pictures. List desirable and undesirable traits.

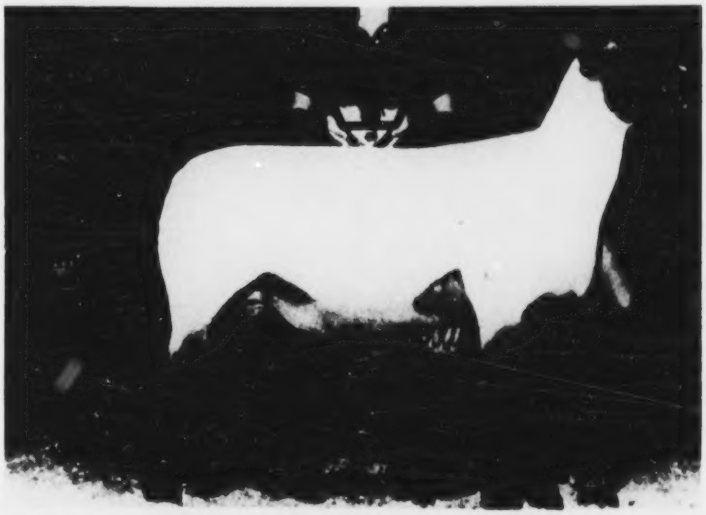
Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

1.

FIGURE 1

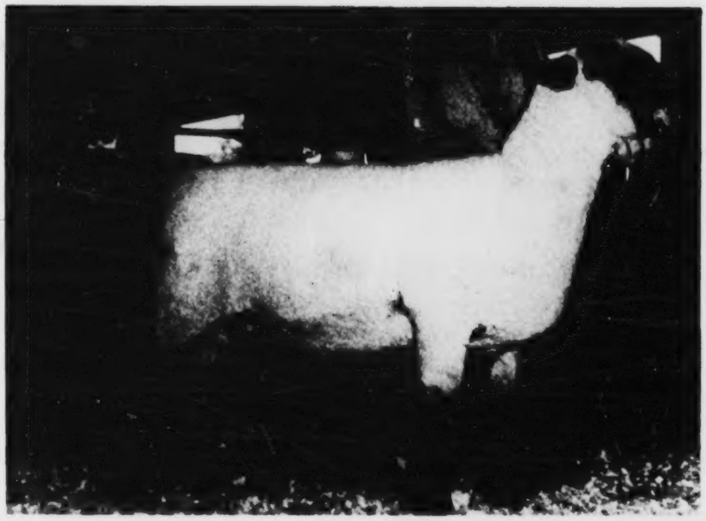


Courtesy: *Sheep Breeder*, Columbia, Missouri.

Desirable Traits	Undesirable Traits

2.

FIGURE 2

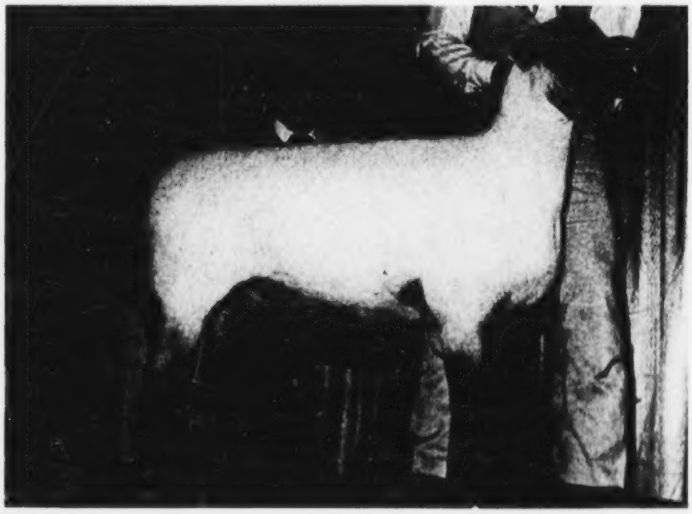


Courtesy: *Sheep Breeder*, Columbia, Missouri.

Desirable Traits	Undesirable Traits
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________

3.

FIGURE 3

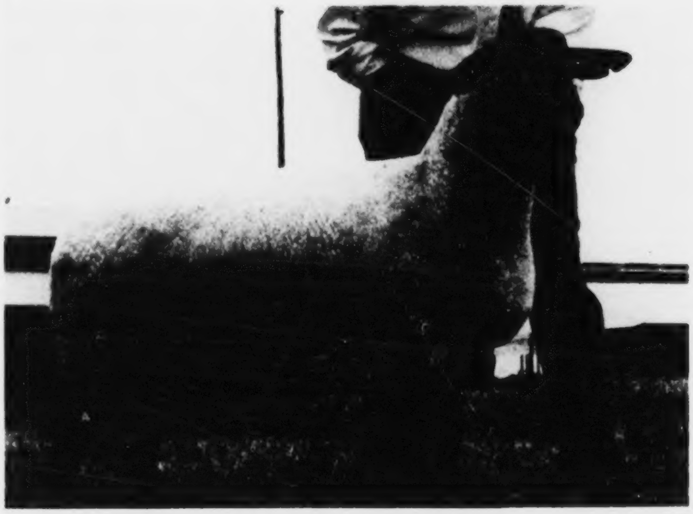


Courtesy: *Sheep Breeder*, Columbia, Missouri.

Desirable Traits	Undesirable Traits

4.

FIGURE 4



Courtesy: *Sheep Breeder*, Columbia, Missouri.

Desirable Traits	Undesirable Traits

ASSIGNMENT SHEET 4

SHEEP BREEDS AND SELECTION

D4

Name ____________________ Score __________

OBJECTIVE 24

Evaluate characteristics of a ram.

INSTRUCTIONS

Reading Comprehension
- Gain factual information

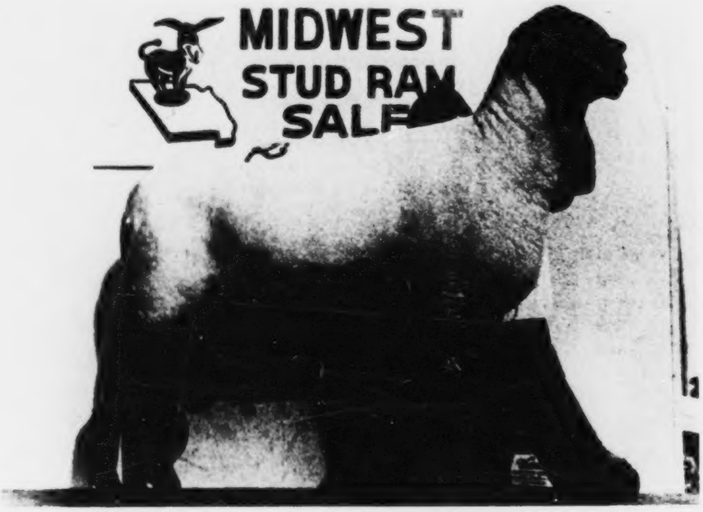
Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

Evaluate the characteristics of each ram shown in the following pictures. List desirable and undesirable traits.

1.

FIGURE 1

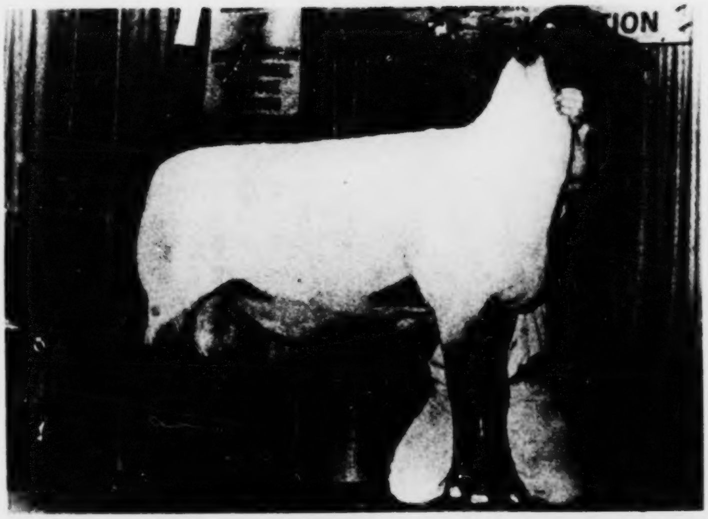


Courtesy: *Sheep Breeder*, Columbia, Missouri.

Desirable Traits	Undesirable Traits

2.

FIGURE 2

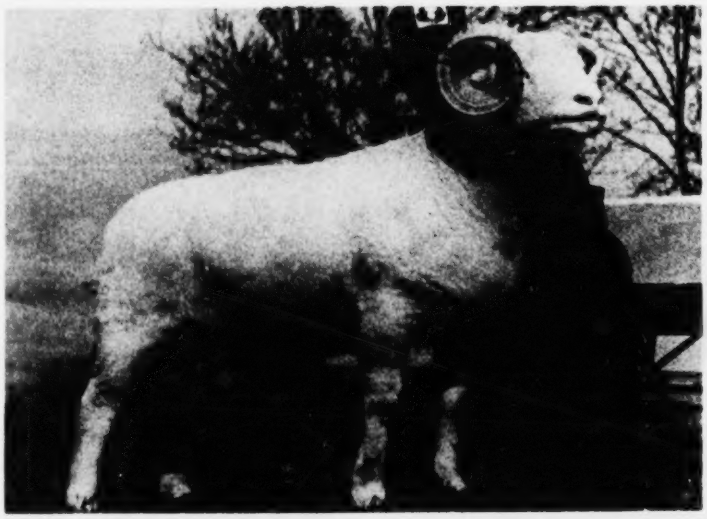


Courtesy: *Sheep Breeder*, Columbia, Missouri.

Desirable Traits	Undesirable Traits

3.

FIGURE 3

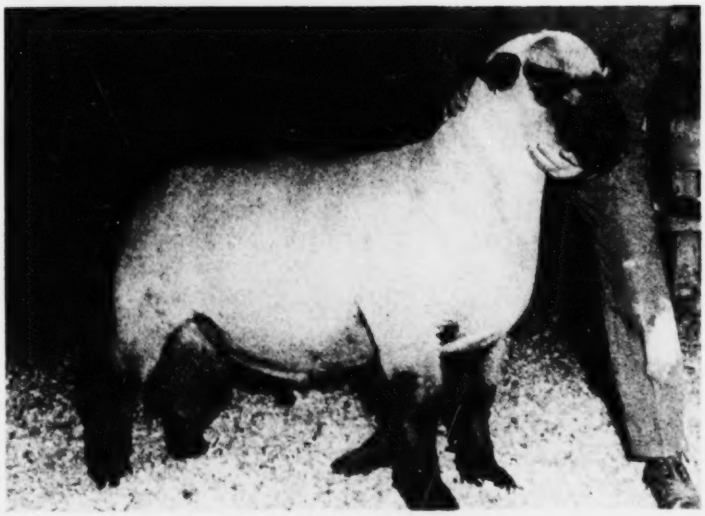


Courtesy: *Sheep Breeder*, Columbia, Missouri.

Desirable Traits	Undesirable Traits
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

4.

FIGURE 4



Courtesy: Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits	Undesirable Traits
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________

ASSIGNMENT SHEET 5

SHEEP BREEDS AND SELECTION

D4

Name ______________________ Score __________

OBJECTIVE 25

Evaluate market lambs.

INSTRUCTIONS

Evaluate the characteristics of each animal shown in the following pictures. List desirable and undesirable traits.

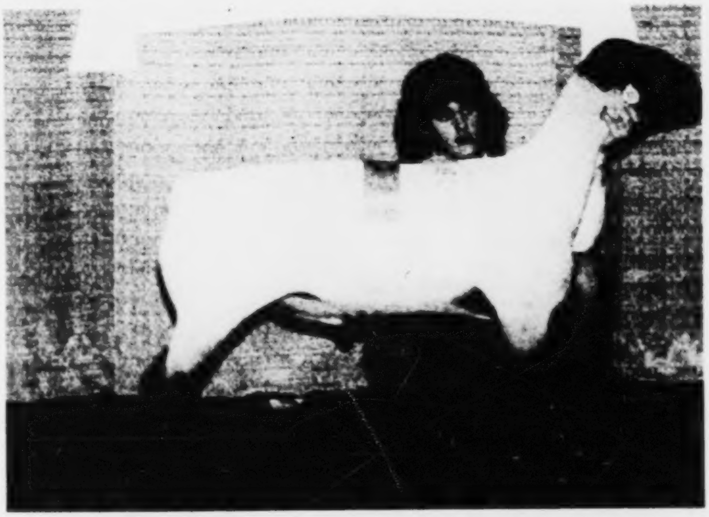
Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

1.

FIGURE 1

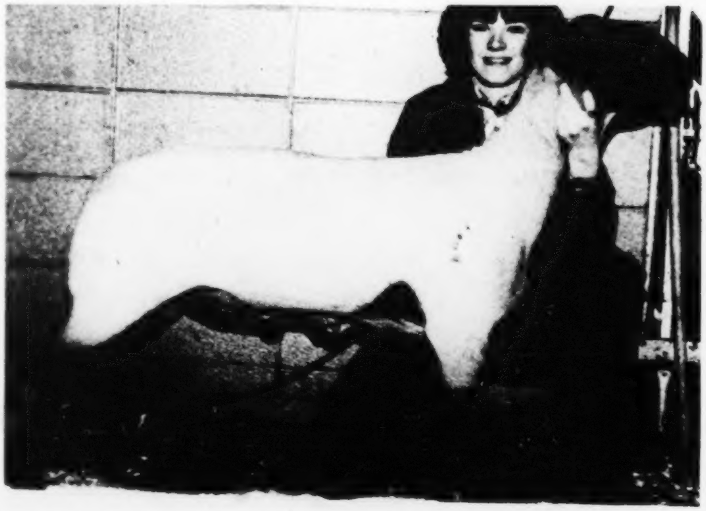


Courtesy: Animal Science Department, Oklahoma State University, Stillwater, Oklahoma

Desirable Traits	Undesirable Traits

2.

FIGURE 2

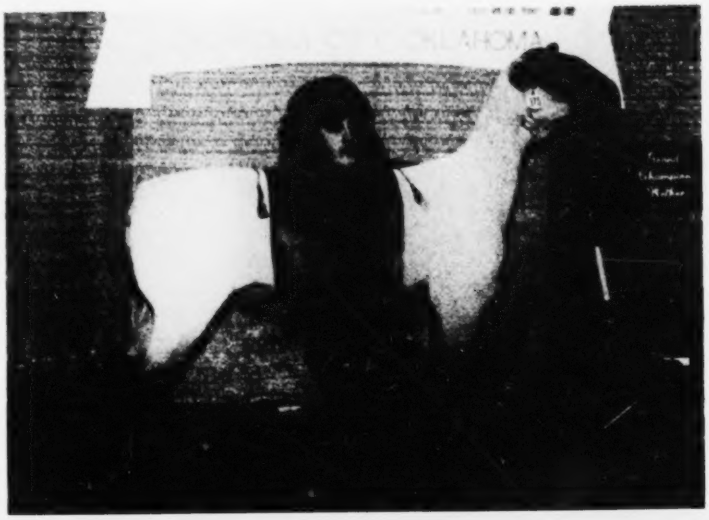


Courtesy: Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits	Undesirable Traits

3.

FIGURE 3

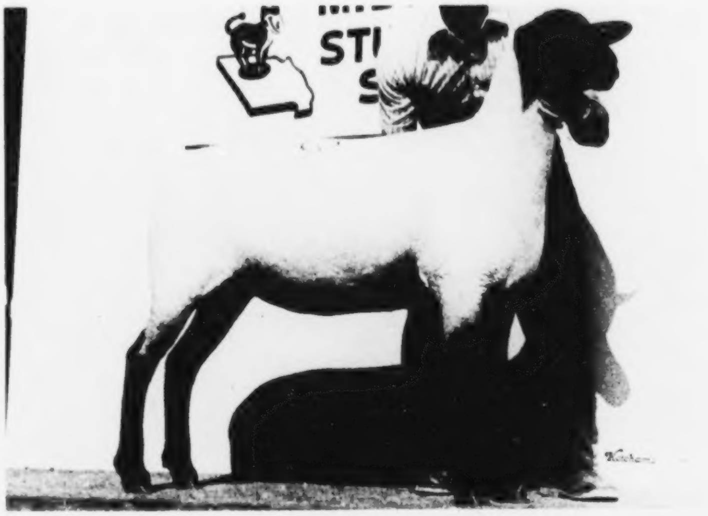


Courtesy: Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits	Undesirable Traits
____________	____________
____________	____________
____________	____________
____________	____________
____________	____________

4.

FIGURE 4

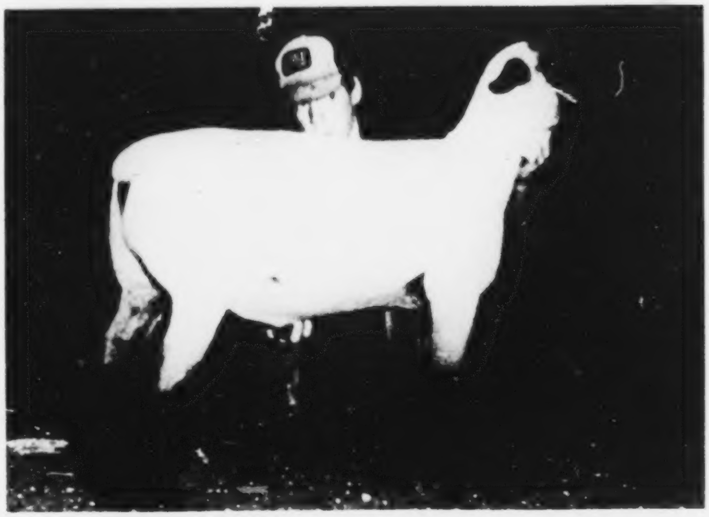


Courtesy: *Sheep Breeder*, Columbia, Missouri.

Desirable Traits	Undesirable Traits
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________

5.

FIGURE 5



Courtesy: Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET 6

SHEEP BREEDS AND SELECTION

D4

Name ______________________ Score __________

OBJECTIVE 26

Judge a class of market lambs.

INSTRUCTIONS

The instructor or a junior or senior agriculture education student has already placed the officials on a market class of lambs. You must now judge the class. Write your placings and take notes on the class.

Class name ______________________ Placings ________

Take notes on the class.

1. ______________________________

2. ______________________________

3. ______________________________

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

4. ______________________________

____

____

____

____

ASSIGNMENT SHEET 7

SHEEP BREEDS AND SELECTION

Name ______________________________ Score __________

OBJECTIVE 27

Judge a class of breeding sheep.

INSTRUCTIONS

The instructor or a junior or senior agriculture education student has already placed the officials on a breeding class of sheep. You must now judge the class. Write your placings and take notes on the class.

Class name _________________________ Placings ________

Take notes on the class.

1. ____

____

____

____

____

2. ____

____

____

____

____

3. ____

____

____

____

____

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

4. ______________________________

____

____

____

____

ASSIGNMENT SHEET 8

SHEEP BREEDS AND SELECTION

D4

Name ______________________________ Score __________

OBJECTIVE 28

Write a set of reasons for placing a class of sheep.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 6
- Assignment Sheet 7

INSTRUCTIONS

Using the notes you took on previous Assignments Sheets, write your reasons for each class. After writing the reasons, go back through them. Determine if the reasons are convincing, whether the reasons separate the animals from each other, and whether you used appropriate judging terms.

Class name __________________________ Placings ________

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Composition
- Proofread and edit

Cognitive Activities
- Collect/record information
- Draw conclusions

Class name ______________________________ Placings ________

ASSIGNMENT SHEET 9

SHEEP BREEDS AND SELECTION

D4

Name ____________________ Score __________

OBJECTIVE 29 **Give a set of oral reasons for placing a class of sheep.**

INTRODUCTION

Giving reasons orally takes a lot of practice. Your reasons should describe to the reason-taker just how you placed the class. In order to obtain a good score, you must convince the reason-taker that your placings are correct.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 8

INSTRUCTIONS

Select one of the previously written sets of reasons and be prepared to give the reasons orally. Read over your reasons several times. Do not attempt to memorize the reasons, just remember the good points of each animal and the grants. You should have a good opening statement. Stand in front of a mirror and practice your reasons several times.

1. For which class are you giving the reasons? __________
2. How did you place the class? __________
3. What is your opening statement? __________

   ____
4. Have you studied the reasons, and can you present them without using any of your notes? __________

   ____
5. What is your closing statement? __________

   ____

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Oral Presentation
- Use good speaking techniques
- Select/use words effectively
- Present appropriate appearance

Interactive Communications
- Give/follow oral directions
- Communicate with professional colleagues/associates

ASSIGNMENT SHEET 10

SHEEP BREEDS AND SELECTION

D4

Name ______________________________ Score __________

OBJECTIVE 30

Use resource materials to locate information about sheep breeds.

INTRODUCTION

Individuals may select one breed of animal over another for many reasons. The bottom line for most breed selection is personal preference. The breed associations and their members have worked hard to improve their breeds of cattle. Many associations conduct research on feed conversion and carcass evaluation.

EQUIPMENT AND SUPPLIES

- Information received from breed associations
- Breed magazines and journals
- Other reference materials and books about cattle breeds

INSTRUCTIONS

Reading Comprehension
- Gain factual information
- Draw conclusions
- React to written material

Research and Reference
- Select useful resources
- Find materials in library
- Use standard references
- Use in-book reference tools
- Use magazines and newspapers

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Composition
- Use complete sentences

Answer the following questions about the breed you have selected for your research.

1. Breed ______________________________

2. Where did the breed originate? ______________________________

3. What color is the breed? ______________________________

4. What are the breed's body and head characteristics? __________

____

____

____

____

____

____

Research
- Take notes
- Outline material

Cognitive Activities
- Collect/record information
- Draw conclusions

5. What are considered to be some strong points of the breed?

____

____

____

____

6. What are considered to be some weak points of the breed?

____

7. When was the breed association for this breed formed?

____

8. What is the name and address of the breed association?

____

____

9. How many animals have been recorded in the breed association?

____

10. Who is presently serving as the breed association secretary?

____

11. What is the name of the field person who serves your state?

____

12. Does the breed association publish a newsletter, journal, or magazine? ______________

If yes, what is the name? ______________

13. How does the breed rate as a market animal? ______________

____

14. Does the breed hang up a good, usable carcass? ______________

15. What is the carcass length? __________ Loin eye? __________

16. What type of disposition does the breed have? ________________

____

17. Are the ewes considered to be good milkers? ________________

____

18. Are the rams active breeders? ________________________

19. How does the breed cross in a crossbreeding program? ______

____

20. What does the information say about growth rate?________

____

21. What is your opinion of the breed? ________________

____

____

____

____

22. If you were to go into the sheep business, would you purchase this breed?

____

____

____

____

____

____

OBJECTIVE SHEET

DAIRY BREEDS AND SELECTION

D5

INTRODUCTION

While grain crops are usually thought of as the major commodity produced, dairy products are also a major product of the farm. In Oklahoma, dairy production contributes 166.5 million dollars to the economy. The overall consumption of dairy products was 6 million pounds in 1992.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS	
PREREADING:	Read *Before You Decide to Dairy* by Clifford H. Burton, OSU Fact Sheet No. 4261.
WRITING:	Based on this handout, make a decision whether you would or would not like to enter the dairy business. Write a one page essay supporting your decision.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Identify major breeds of dairy cattle.
2. Label the parts of a dairy cow.
3. Match breeds of dairy cattle to their yearly production averages.
4. Define dairy judging.
5. Match terms associated with dairy cattle judging to their correct definitions.
6. Distinguish between dairy cattle judging terms for desirable and undesirable traits.
7. List traits classified by the dairy-type evaluation system.
8. Select from a list factors to consider in selecting dairy cattle.
9. Explain the purpose of the Dairy Cow Unified Score Card.
10. State the purpose of the FFA placing card.
11. List the steps involved in computing placing scores.
12. Compute placing scores. (Assignment Sheet 1)
13. State the purpose of giving reasons for placings.
14. Arrange in order steps to follow in taking notes for oral reasons for placings.
15. Select from a list techniques for presenting oral reasons for placings.
16. Arrange in order steps to follow in presenting oral reasons for placings.
17. Evaluate animals using the Dairy Cow Unified Score Card criteria. (Assignment Sheet 2)
18. Judge classes of cows using the point system from the Dairy Cow Unified Score Card. (Assignment Sheet 3)
19. Judge a production class of dairy cattle. (Assignment Sheet 4)
20. Judge an open heifer class of dairy cattle. (Assignment Sheet 5)
21. Evaluate a set of written reasons for placing a class of dairy cattle. (Assignment Sheet 6)

22. Write a set of reasons for placing a class of dairy cattle. (Assignment Sheet 7)

23. Give a set of oral reasons for placing a class of dairy cattle. (Assignment Sheet 8)

24. Use resource materials to locate information about a breed of dairy cattle. (Assignment Sheet 9)

INFORMATION SHEET

DAIRY BREEDS AND SELECTION

D5

OBJECTIVE 1

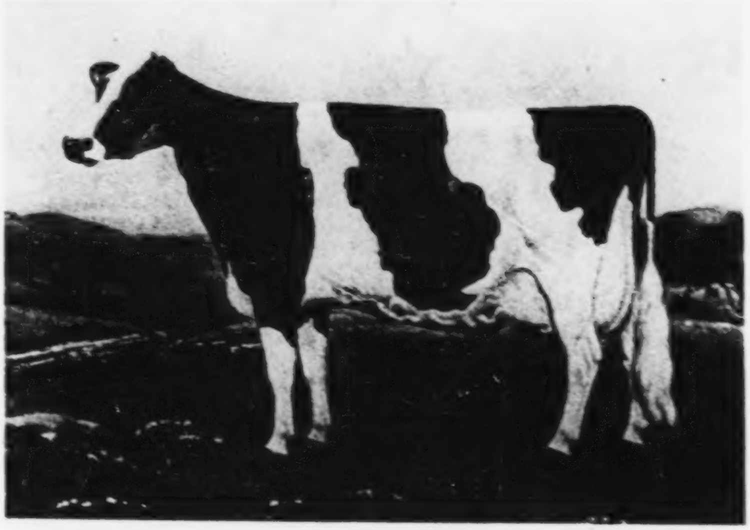
Optional Activities/
Resources in
Instructor's Guide

Identify major breeds of dairy cattle.

WORDS YOU SHOULD KNOW	
breed characteristics	physical traits that differentiate one breed from another
bull	mature male dairy animal
calf	male or female dairy animal under one year of age
cow	mature female dairy animal; shows evidence of having produced one or more calves
heifer	female dairy animal that has not borne an offspring
springer	cow showing signs of pregnancy

- Holstein

FIGURE 1



Courtesy: Holstein-Friesian Association of America, Brattleboro, Vermont.

- Jersey

FIGURE 2

Courtesy: American Jersey Cattle Club, Reynoldsburg, Ohio.

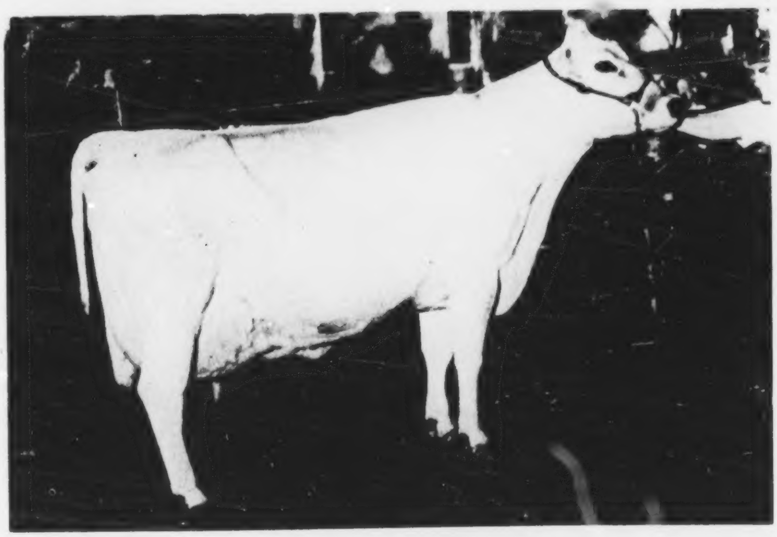
- Guernsey

FIGURE 3

Courtesy: American Guernsey Cattle Club, Reynoldsburg, Ohio.

- Brown Swiss

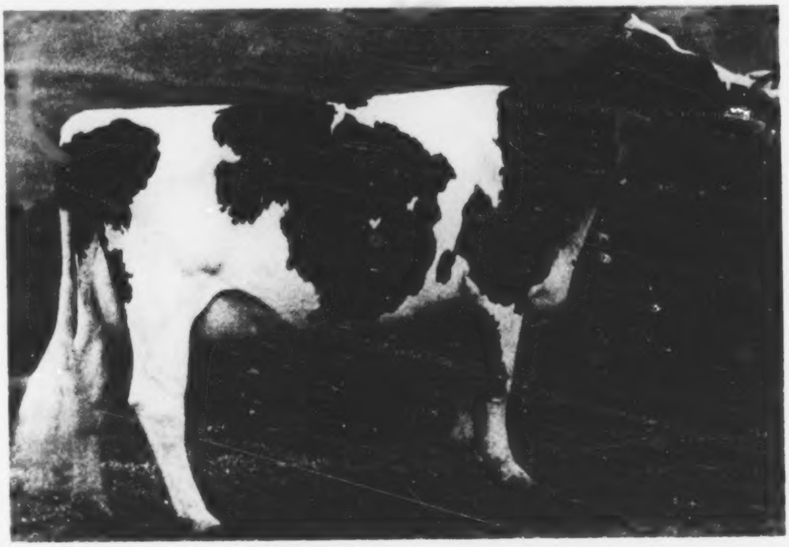
FIGURE 4



Courtesy: Brown Swiss Cattle Breeders Association of the United States of America, Beloit, Wisconsin.

- Ayrshire

FIGURE 5



Courtesy: Ayrshire Breeders Association, Brattleboro, Vermont.

OBJECTIVE 2

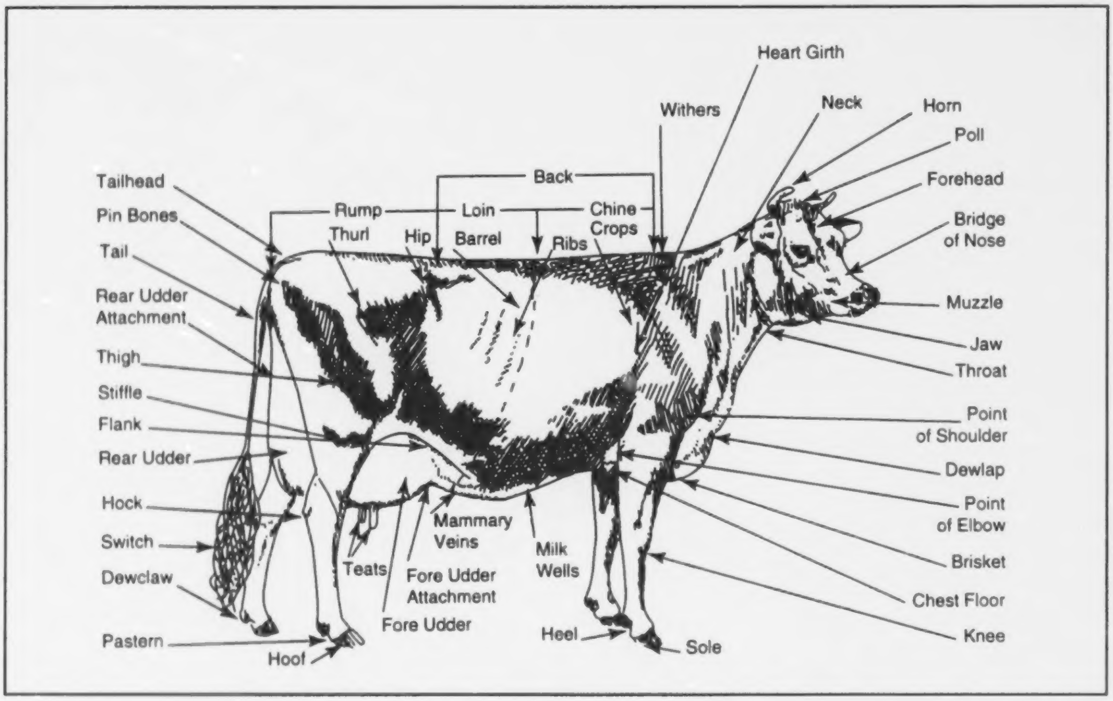
Required Activities/
Resources
- Transparency Master 1
- Discussion

Label the parts of a dairy cow.

You will see a transparency showing the parts of a dairy cow.

Discuss the three parts of the back of a cow: the loin, chine, and rump.

FIGURE 6


Heart Girth
Withers
Neck
Horn
Poll
Forehead
Bridge of Nose
Muzzle
Jaw
Throat
Point of Shoulder
Dewlap
Point of Elbow
Brisket
Chest Floor
Knee
Sole
Heel
Back
Rump
Loin
Chine
Crops
Thurl
Hip
Barrel
Ribs
Tailhead
Pin Bones
Tail
Rear Udder Attachment
Thigh
Stiffle
Flank
Rear Udder
Hock
Switch
Dewclaw
Pastern
Hoof
Teats
Mammary Veins
Milk Wells
Fore Udder Attachment
Fore Udder

Used with permission of the American Jersey Cattle Club, Reynoldsburg, Ohio.

OBJECTIVE 3

Match breeds of dairy cattle to their yearly production averages.

Required Activities/
Resources
- Discussion

Discuss the importance of butterfat in milk.

Discuss the importance of milking cows that produce large quantities.

WORDS YOU SHOULD KNOW	
butterfat	percent of fat in the milk
milk production	amount in pounds of milk that a cow produces during a lactation period
lactation	span of time that a cow is giving milk

- 1992 National

Breed	Percent Butterfat	Pounds Butterfat	Pounds Milk Production
Holstein	3.66	703	19,185
Ayrshire	3.95	569	14,398
Jersey	4.75	618	13,020
Brown Swiss	4.03	606	15,062
Guernsey	4.57	611	13.363

- 1993 State

Breed	Percent Butterfat	Pounds Butterfat	Pounds Milk Production
Holstein	3.4	596	17,468
Ayrshire	3.7	556	15,146
Jersey	4.5	565	12,599
Brown Swiss	3.8	513	13,366
Guernsey	4.3	521	12,103

OBJECTIVE 4

Optional Activities/
Resources in
Instructor's Guide

Define dairy judging.

- **dairy judging** – process of carefully analyzing a dairy animal's individual traits and comparing those traits to an ideal animal or standard

OBJECTIVE 5

Optional Activities/
Resources in
Instructor's Guide

Match terms associated with dairy cattle judging to their correct definitions.

- **balance of symmetry** – proper proportions and blending of parts
- **breed character** – traits that distinguish one breed from another
- **clean** – free from fat
- **cow-hocked** – rear legs turned so that the hocks are close together and feet point out when viewed from the rear

- **femininity** – traits distinguishing female from male
- **grant** – recognition that an animal has desirable traits but that these traits are not acceptable to be used any higher in the class
- **masculinity** – traits distinguishing a male from a female
- **post-legged** – rear legs too straight when viewed from the side
- **quality** – overall smoothness, blending of shoulders, and refinement of head and bone
- **scale** – size of the animal as determined by the skeletal structure
- **sickle-hocked** – rear legs too curved when viewed from the side
- **soundness** – quality of being correct on the feet and legs
- **spring of rib** – amount ribs arch out from the backbone
- **type** – combination of characteristics that make an animal most useful for a specific purpose

OBJECTIVE 6

Distinguish between dairy cattle judging terms for desirable and undesirable traits.

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Discuss why traits are classified desirable and undesirable.

WORDS YOU SHOULD KNOW	
discrimination	defect that is undesirable
disqualification	statement that means an animal cannot be registered, or, in the show ring, is not eligible to win a prize
pedigree	register of lines of ancestry

AREA	DESIRABLE	UNDESIRABLE
Breed Type and General Appearance	Larger cow and more size and scale	Small framed, lacks size and scale
	Shows breed character in head and neck	Lacks breed character in head and neck
	Feminine head	Masculine head
	More breed type and character	Poor breed type and character
	Neck blends smoothly with shoulders	Rough in neck and shoulders
	Stronger and straighter in the loin and chine	Weak in the loin and chine
	Wider and more level at the pins	Narrow in the pins
	Smoother over the rump	Rough over the rump
	Shoulders blend smoothly with body	Shoulders tied in roughly with body
	Wider and more open at the pins	Shallow in the pins
	Blends smoothly at tail setting	Rough over tail setting
	Longer from hip to pins	Shallow from hip to pins
	Stands squarely on the legs	Poor leg structure
	More strength in the loin	Weak in the loin
	Wider in the thurls	Narrow in the thurls
	Stands straight on rear legs	Crooked rear legs
	Straighter on the pasterns	Weak on the pasterns
	Travels freely	Shows evidence of lameness
Dairy character	More milky appearance	Less milky appearance
	More dairy-like	Less dairy-like
	Cleaner cut head and neck	Coarse head and neck
	Sharper in the withers	Rough and coarse in the withers
	Thinner in the thighs	Thicker in the thighs
	Cleaner and more refined	Thick and rough
	Longer and thinner in the neck and leaner in the throat	Short, thick in the neck and throat
	More open rib	Closed rib
	More spread to rib	Shallow-ribbed
	Free of excess flesh	Carrying excess flesh
	Sharper in hips and pins	Rough in hips and pins
Body capacity	Longer, more spacious barrel with more spring to rib	Short, narrow barrel with less spring to rib
	Fuller in the foreribs	Shallow in the foreribs
	More spring to the foreribs	Narrow-bodied
	Deeper in the fore and rear rib	Shallow in the fore and rear rib
	Deeper-ribbed cow	Narrow-ribbed cow
	Showing greater arch to the rear rib	Narrow in the rear rib
	Longer and deeper in the barrel	Shorter and shallow in the barrel
	Deeper in the heart	Shallow in the heart
	Fuller in the crops	Narrow in the crops
	Longer in the body	Short-bodied
	Shows more stretch	Short
	More open in the rib	Narrow-ribbed
	Deeper in the flank	Shallow in the flank
	Fuller in the heart girth	Weak in the heart girth
	Smoother behind the shoulders	Rough behind the shoulders
	Greater body capacity	Less body capacity
	Greater spring of rib and depth of body	Shallow spring of rib and body depth

AREA	DESIRABLE	UNDESIRABLE
Udder	Larger, more capacious udder More uniformly balanced udder that is more level on the floor Teats more squarely placed Teats of uniform size Higher and wider rear udder attachment More nearly level on the floor Carrying (or extending) farther forward Smoother (or stronger) in the fore udder attachment More firmly attached in both fore and rear Showing more quality and texture Teats of more desirable size, shape, and placement	Small, shallow udder Unbalanced udder; tilted up or down Teats poorly placed Teats large or small Short and narrow rear udder attachment Tilted udder Udder does not extend forward Weak fore udder attachment Loosely attached in both fore and rear Poor quality and texture Teats too close together

Adapted with permission from *Dairy Cattle Judging* by Clifford Burton, Oklahoma State University.

OBJECTIVE 7

Optional Activities/ Resources in Instructor's Guide

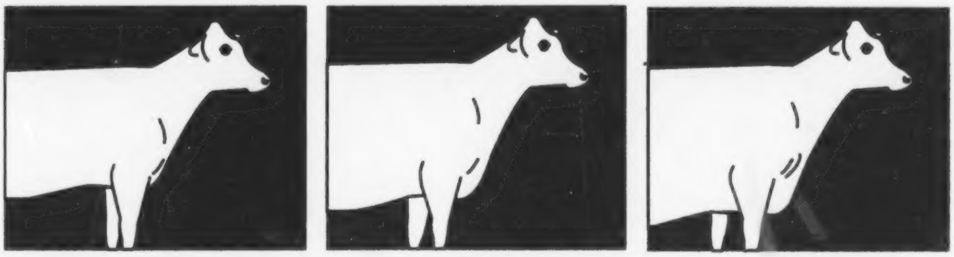
List traits classified by the dairy-type evaluation system.

☑ **NOTE:** The dairy-type evaluation system was developed by the National Association of Animal Breeders. It is used by classifiers to evaluate individual animals' types for guiding breeding programs or establishing the genetic merit of sires. A committee designed the system around seven basic concepts: evaluation of specific biological traits; use of numerical scores from one biological extreme to the other (linear scoring); scoring of all similar age contemporaries; evaluation of cows while they are young; evaluation of both registered and grade cows; scoring of cows without knowledge of sire or previous scores; and analysis by direct comparison procedures.

- Stature (measured at withers)
  - very tall - 90 to 99 points
  - tall - 80 to 89 points
  - intermediate - 70 to 79 points
  - low set - 60 to 69 points
  - very low set - 50 to 59 points

- Chest and body (considering age and stage of lactation)
  - ☐ wide chest, deep rib, long body - 90 to 99 points
  - ☐ wide and strong, moderate length of body - 80 to 89 points
  - ☐ intermediate - 70 to 79 points
  - ☐ narrow - 60 to 69 points
  - ☐ extremely narrow and frail - 50 to 59 points

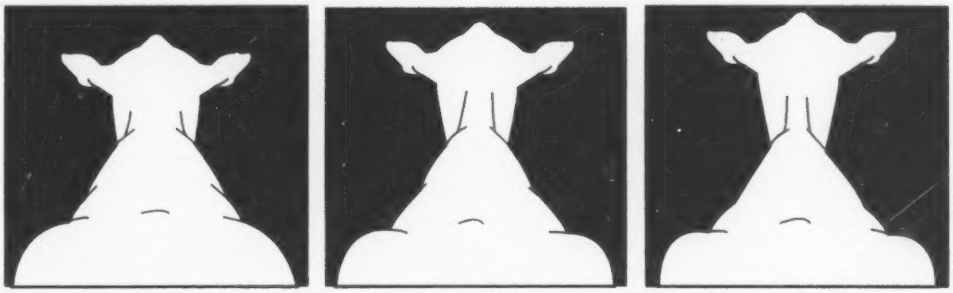
FIGURE 7



Extremely Narrow and Frail   Intermediate   Wide Chest, Deep Rib

- Dairy character (independent of performance)
  - ☐ extremely sharp - 90 to 99 points
  - ☐ clean cut, open, and angular - 80 to 89 points
  - ☐ intermediate - 70 to 79 points
  - ☐ thick and coarse - 60 to 69 points
  - ☐ extremely thick and tight ribbed - 50 to 59 points

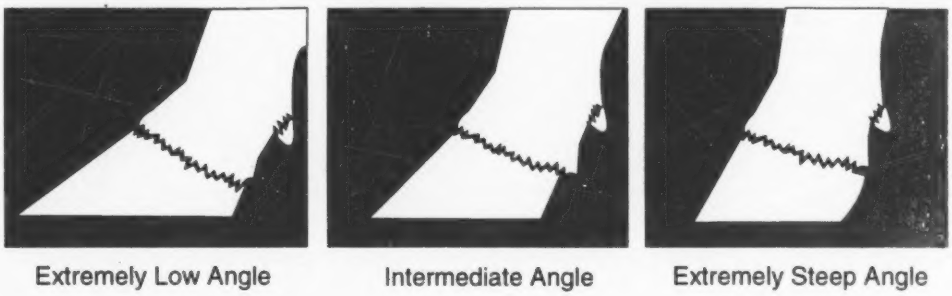
FIGURE 8



Extremely Thick   Intermediate   Extremely Sharp

- Foot and shape (angle)
  - ☐ extremely steep angle, indicated by small feet (greater than 50 degrees) - 90 to 99 points
  - ☐ moderate angle, well-formed feet - 80 to 89 points
  - ☐ intermediate angle, well-formed feet (40 to 45 degrees) - 70 to 79 points
  - ☐ low angle, shallow or flared foot - 60 to 69 points
  - ☐ extremely low angle indicated by long toes - 50 to 59 points

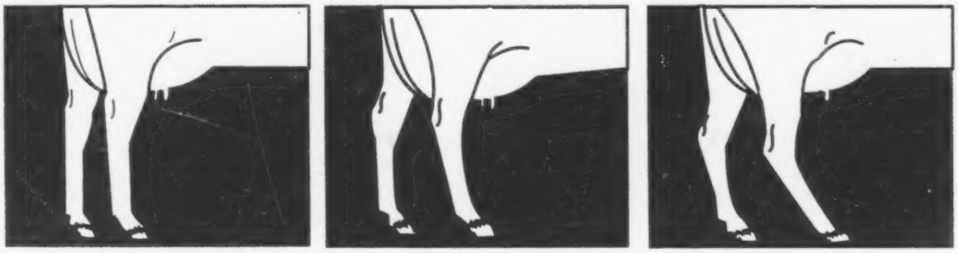
FIGURE 9



Extremely Low Angle   Intermediate Angle   Extremely Steep Angle

- Rear legs (side view)
    - extremely sickled - 90 to 99 points
    - moderate set in hock - 80 to 89 points
    - slight set in hock- 70 to 79 points
    - straight in hock - 60 to 69 points
    - extremely posty or overextended - 50 to 59 points

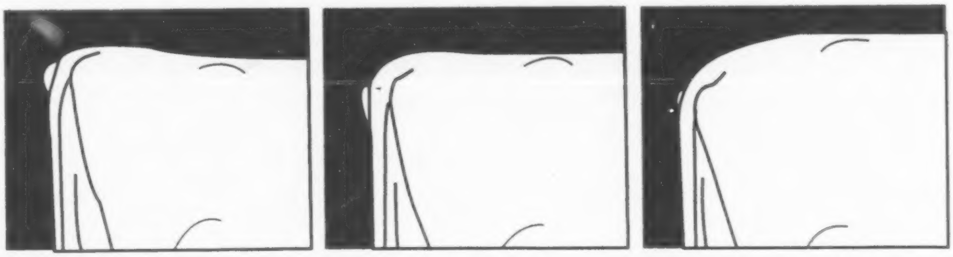
FIGURE 10



Extremely Posty Slight Set inHock Extremely Sickled

- Pelvic angle
    - severe slope from hooks to pins - 90 to 99 points
    - moderate slope from hooks to pins - 80 to 89 points
    - nearly level from hooks to pins - 70 to 79 points
    - pins higher than hooks - 60 to 69 points
    - pins clearly higher than hooks - 50 to 59 points

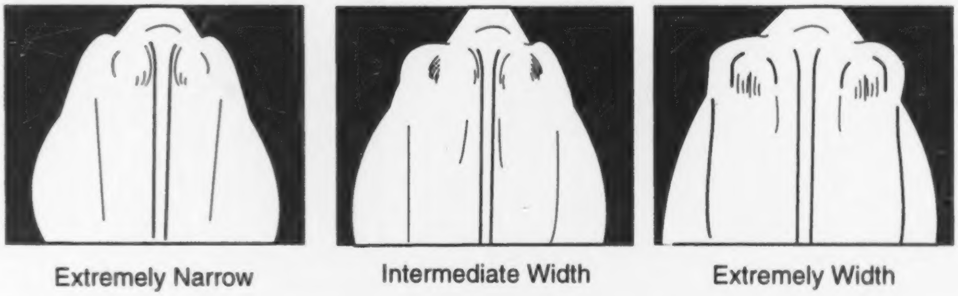
FIGURE 11



Pins Higher Than Hooks Nearly Level Severe Slope

- Rump width
  - ☐ extreme width of pelvic area - 90 to 99 points
  - ☐ wide width of pelvic area - 80 to 89 points
  - ☐ intermediate width of pelvic area - 70 to 79 points
  - ☐ narrow in pelvic area - 60 to 69 points
  - ☐ extremely narrow in pelvic area - 50 to 59 points

FIGURE 12



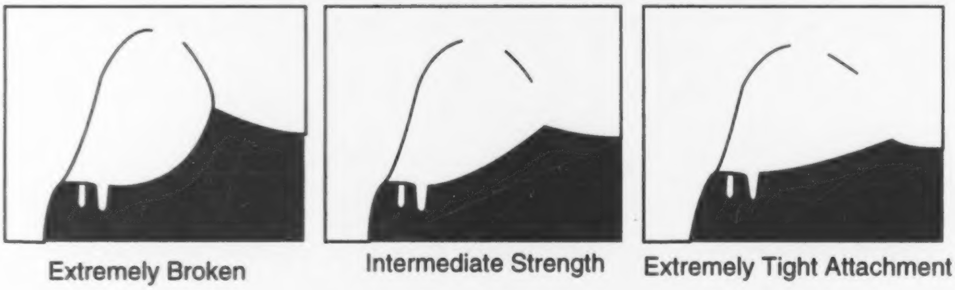
Extremely Narrow

Intermediate Width

Extremely Width

- Fore udder attachment
  - ☐ extremely tight attachment - 90 to 99 points
  - ☐ strong, firm - 80 to 89 points
  - ☐ intermediate strength - 70 to 79 points
  - ☐ loose attachment - 60 to 69 points
  - ☐ extremely broken - 50 to 59 points

FIGURE 13



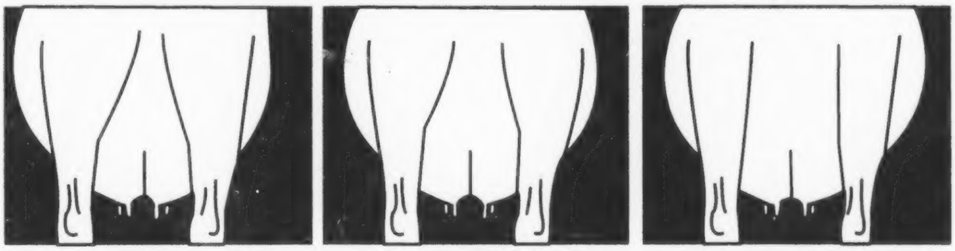
Extremely Broken

Intermediate Strength

Extremely Tight Attachment

- Rear udder width (at attachment)
    - extremely wide - 90 to 99 points
    - wide - 80 to 89 points
    - intermediate width - 70 to 79 points
    - narrow - 60 to 69 points
    - extremely narrow - 50 to 59 points

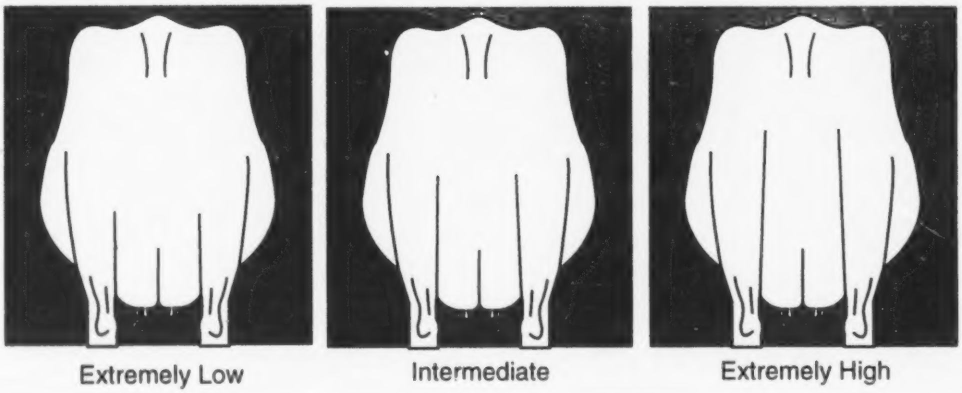
FIGURE 14



Extremely Narrow | Intermediate Width | Extremely Width

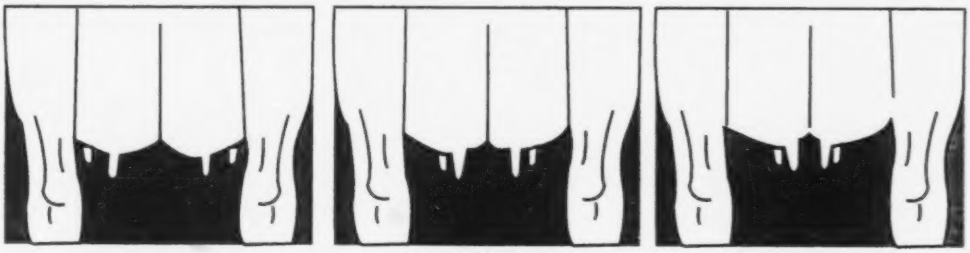
- Rear udder height (at attachment)
  - ☐ extremely high - 90 to 99 points
  - ☐ high - 80 to 89 points
  - ☐ intermediate - 70 to 79 points
  - ☐ low - 60 to 69 points
  - ☐ extremely low - 50 to 59 points

FIGURE 15


Extremely Low
Intermediate
Extremely High

- Teat placement (rear view)
  - ☐ base of teats extremely close - 90 to 99 points
  - ☐ teats too close - 80 to 89 points
  - ☐ centrally placed, nearly aligned, tilting inward - 70 to 79 points
  - ☐ intermediate placement, front teats wider than rear teats - 60 to 69 points
  - ☐ extremely wide placement - 50 to 59 points

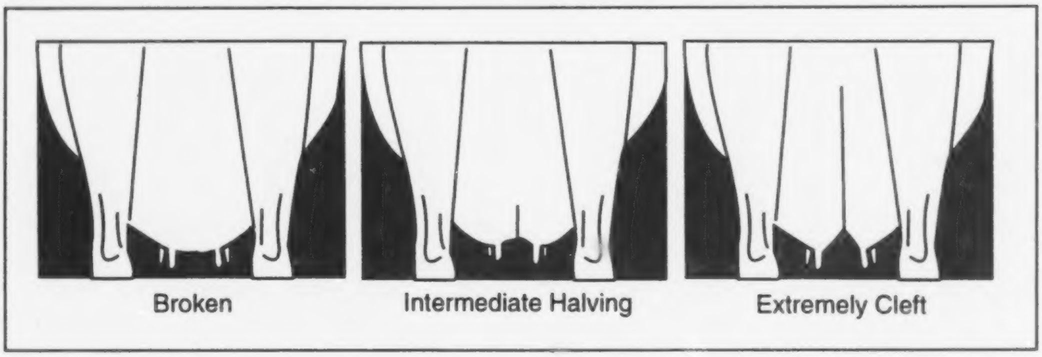
FIGURE 16



Extremely Wide Placement
Centrally Placed
Base of Teats Extremely Close

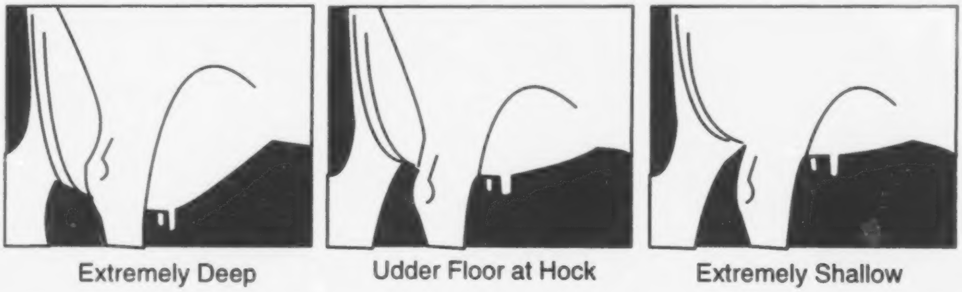
- Suspensory ligament (cleft)
    - ☐ extreme cleft - 90 to 99 points
    - ☐ clearly defined halving - 80 to 89 points
    - ☐ intermediate halving - 70 to 79 points
    - ☐ flat udder floor - 60 to 69 points
    - ☐ broken - 50 to 59 points

FIGURE 17


Broken
Intermediate Halving
Extremely Cleft

- Udder depth (relative to point of hock)
  - ☐ extremely shallow, udder floor well above hock - 90 to 99 points
  - ☐ udder floor clearly above hock - 80 to 89 points
  - ☐ udder floor at the hock - 70 to 79 points
  - ☐ udder floor clearly below hock - 60 to 69 points
  - ☐ extremely deep - 50 to 59 points

FIGURE 18



Extremely Deep Udder Floor at Hock Extremely Shallow

Figures 7 - 18 reprinted by permission from December 10 and 25, 1979, issue of *Hoard's Dairyman*, Copyright 1979 by W. D. Hoard and Sons Company, Ft. Atkinson, Wisconsin. Also by permission of National Association of Animal Breeders, Columbia, Missouri.

OBJECTIVE 8

Required Activities/
Resources
- Transparency Masters 2-4

Optional Activities/
Resources in
Instructor's Guide

Select from a list factors to consider in selecting dairy cattle.

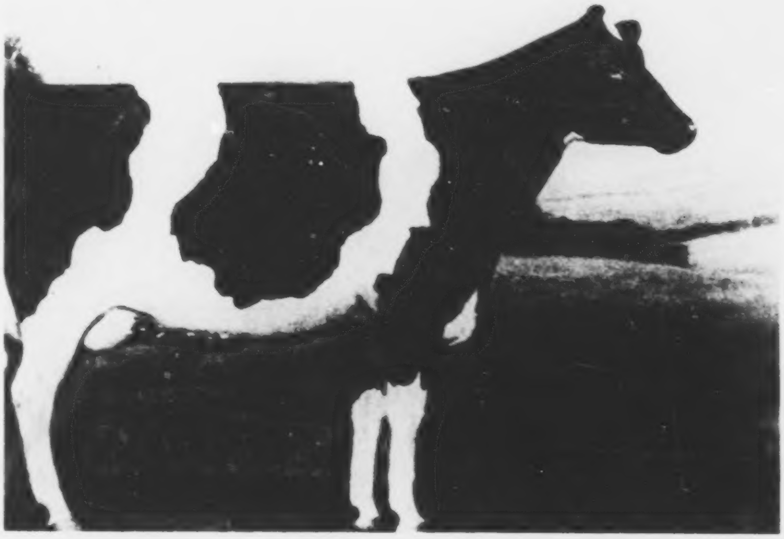
You will see three transparencies of dairy cows.

WORDS YOU SHOULD KNOW	
dairy herd improvement records (DHI)	production records kept on producing dairy cattle
disposition	manner in which an animal acts; quiet, docile, vicious
lactation period	span of time a cow is giving milk
mammary system	parts of the cow directly responsible for producing and storing milk

- General appearance

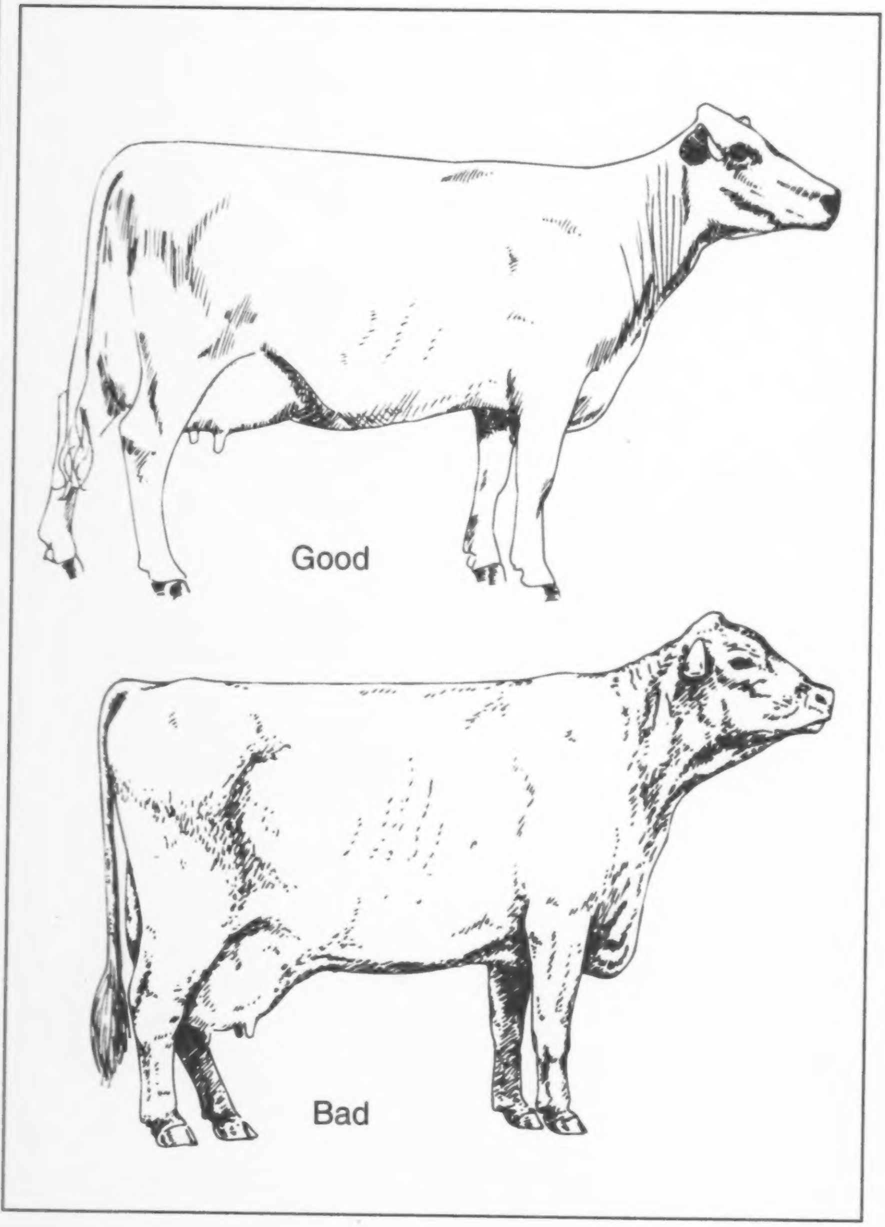
  ☑ **NOTE:** Cows with a good general appearance are attractive, have femininity, vigor, stretch, scale, and a harmonious blend of all parts. Evaluate all parts of the cow when considering general appearance.

FIGURE 19



Courtesy: Holstein-Friesian Association of America, Brattleboro, Vermont.

FIGURE 20



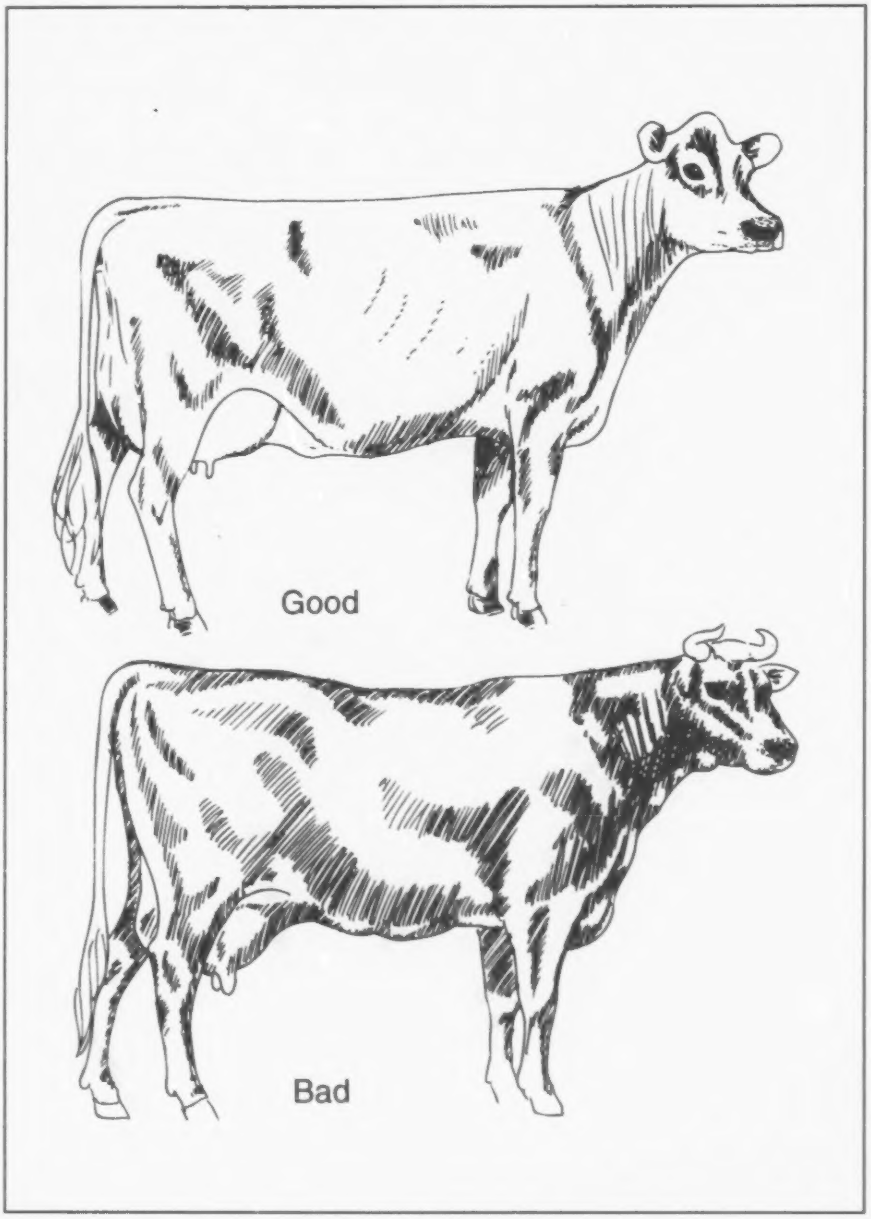
- Dairy character

☑ **NOTE:** Dairy character refers to a combination of characteristics that indicate a cow's ability to convert feed into milk. These characteristics include angularity and general openness without weakness, freedom from coarseness, and evidence of milking ability with udder quality, giving due regard to stage of lactation.

FIGURE 21

Courtesy: American Guernsey Cattle Club, Reynoldsburg, Ohio.

FIGURE 22

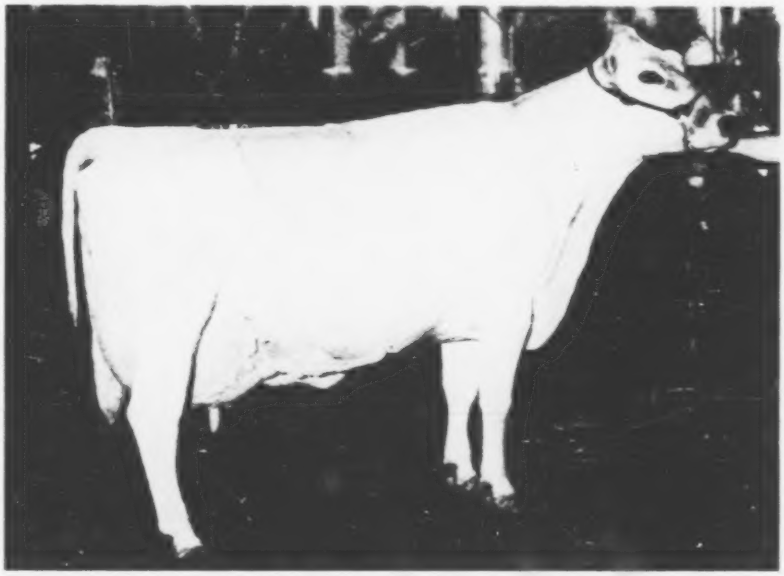


Lower illustration used with permission of the Idaho State Board for Vocational Education.

- Body capacity

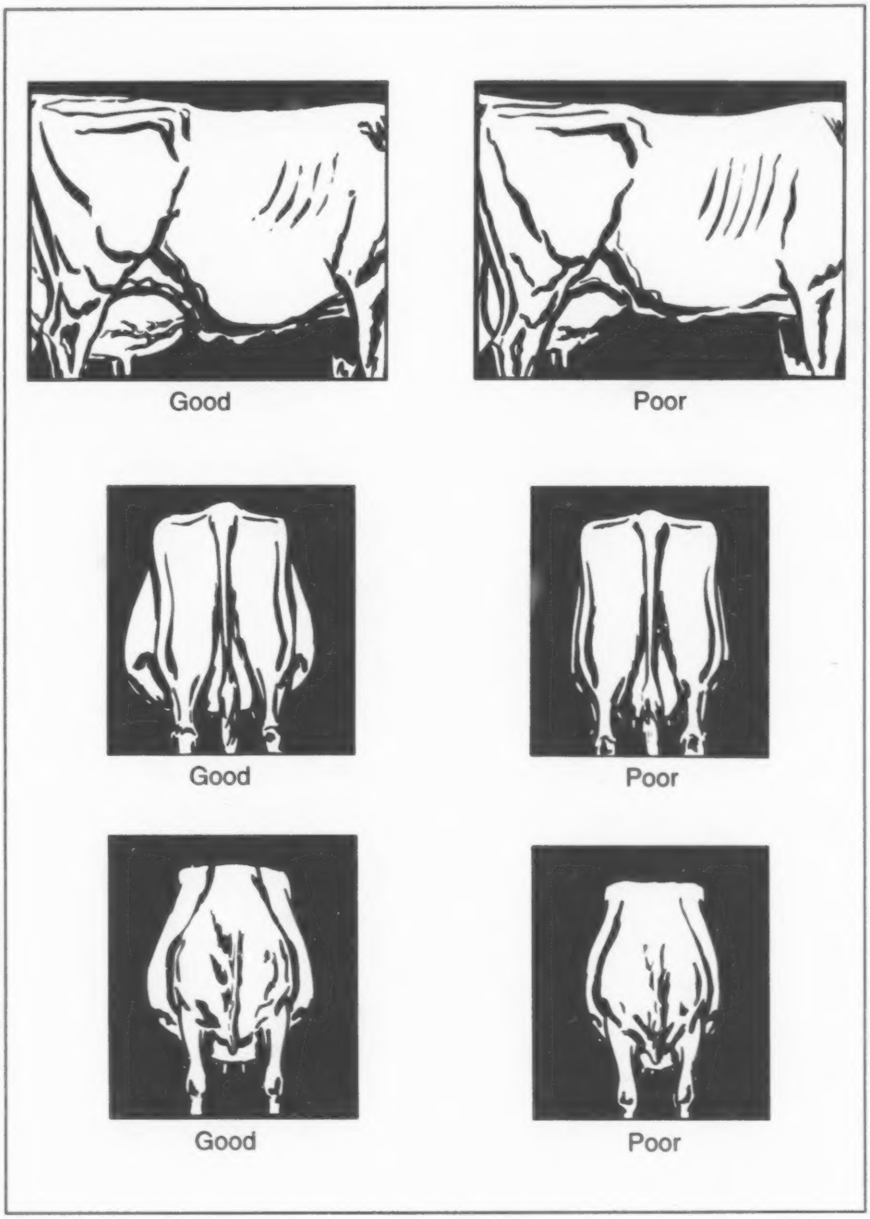
☑ **NOTE:** Body capacity is determined by the size of the barrel and by the heart girth. The length, width, and depth of the body determine its capacity.

FIGURE 23



Courtesy: Brown Swiss Cattle Breeders Association of the United States of America, Beloit, Wisconsin.

FIGURE 24



Good

Poor

Good

Poor

Good

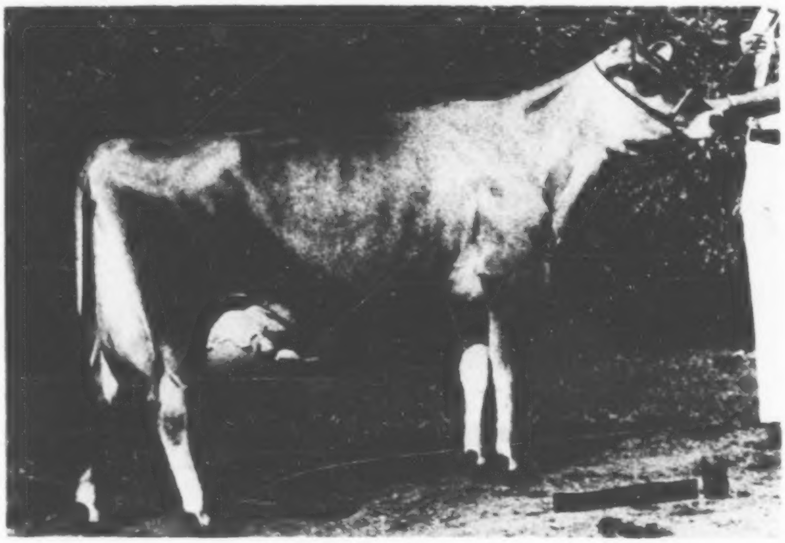
Poor

Used with permission of the Idaho Board for Vocational Education.

- Udder

☑ **NOTE:** The udder should be large enough to produce and store milk. The length, width, and the depth of the udder determine its capacity. The udder should be attached high and wide behind and carry well forward in front. The udder should not have a tendency to break away from the body. The udder should have four evenly spaced teats of uniform size. The four quarters of the udder should be of equal size and blend in smoothly with each other. The mammary veins should be large, prominent, long, and should stand out. The milk wells should be large and numerous.

FIGURE 25



Courtesy: Agri Graphics, Ltd., Cary, Illinois.

FIGURE 26

Courtesy: Agri Graphics, Ltd., Cary, Illinois.

OBJECTIVE 9

Optional Activities/
Resources in
Instructor's Guide

Explain the purpose of the Dairy Cow Unified Score Card.

- to indicate the points or criteria to be considered in selecting dairy animals and the relative emphasis that should be given each point

FIGURE 27

DAIRY COW UNIFIED SCORE CARD

Copyrighted by The Purebred Dairy Cattle Association, 1943. Revised, and Copyrighted 1957, 1971, 1982.

Breed characteristics should be considered in the application of this score card		Perfect Score
Order of observation 1. **GENERAL APPEARANCE** *(Attractive individuality with, femininity, vigor, stretch, scale, and harmonious blending of all parts with impressive style and carriage.)*		35
BREED CHARACTERISTICS — (see reverse side)	5	
STATURE — height including moderate length in the leg bones with a long bone patterm throughout the body structure.	5	
FRONT END — adequate constitution with strength and dairy refinement. SHOULDER BLADES and elbow set firmly and smoothly against the chest wall and withers to form a smooth union with the neck and body. CHEST deep and full with ample width between front legs.	5	
BACK — straight and strong; LOIN — broad, strong and nearly level AND RUMP — long, wide and nearly level with pin bones slightly lower than hip bones. THURLS high and wide apart; TAIL HEAD set nearly level with topline and with tail head and tail free from coarseness.	5	
LEGS AND FEET — bone flat and strong. FRONT LEGS straight, wide apart and squarely placed; HIND LEGS, nearly perpendicular from hock to pastern from a side view and straight from the rear view; HOCKS cleanly molded free from coarseness and puffiness; PASTERNS short and strong with some flexibility and FEET short, well rounded with deep heel and level sole.	15	
2. **DAIRY CHARACTER** *(Angularity and general openness without weakness, freedom from coarseness, and evidence of milking ability with udder quality giving due regard to stage of lactation)* NECK — long, lean, and blending smoothly into shoulders; clean cut throat, dewlap, and brisket; WITHERS — sharp with chine prominent: RIBS — wide apart, rib bones wide, flat and long; THIGHS — incurving to flat and wide apart from the rear view, providing ample room for the udder and its rear attachment, and SKIN — thin, loose and pliable.		20
3. **BODY CAPACITY** *(Relatively large in proportion to size, age and period of gestation of animal, providing ample capacity, strength, and vigor)* CHEST — large, deep and wide floor with well sprung fore ribs blending into the shoulders; crops full. BODY — strongly supported, long, deep and wide; depth and spring of rib tending to increase toward the rear. FLANKS — deep and refined.		10
4. **UDDER** *(Strongly attached, well balanced with adequate capacity possessing quality indicating heavy milk production for long period of usefulness)*		35
FORE UDDER — strongly and smoothly attached, moderate length and uniform width from front to rear.	6	
REAR UDDER — strongly attached, high, wide with uniform width from top to bottom and slightly rounded to udder floor.	8	
UDDER SUPPORT — udder carried snugly above the hocks showing a strong suspensory ligament with clearly defined halving.	11	
TEATS — uniform size of medium length and diameter, cylindrical, squarely placed under each quarter, plumb, and well spaced from side and rear views	5	
BALANCE, SYMMETRY AND QUALITY — symmetrical with moderate length, width and depth, no quartering on sides and level floor as viewed from the side; soft, pliable and well collapsed after milking; quarters evenly balanced. Because of the natural undeveloped udder in heifer calves and yearlings, less emphasis is placed on udder and more on general appearance, dairy character and body capacity. A slight to serious discrimination applies to overdeveloped, fatty udders in heifer calves and yearlings.	5	
TOTAL		100

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OBJECTIVE 10

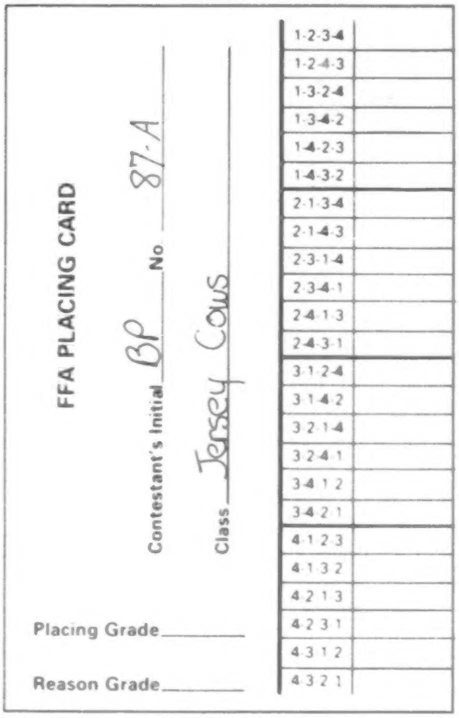
Optional Activities/ Resources in Instructor's Guide

State the purpose of the FFA placing card.

- Identify the judge
- Record the placing
- Relate to officials how the class was placed

☑ **NOTE:** Fill out the card in pencil, and write clearly. An incorrectly written card can cause a team to lose a contest.

FIGURE 28



FFA PLACING CARD

Contestant's Initial BP No 87-A

Class Jersey Cows

Placing Grade ________

Reason Grade ________

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

OBJECTIVE 11

Optional Activities/ Resources in Instructor's Guide

List the steps involved in computing placing scores.

☑ **NOTE:** There are always four animals in a livestock class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.

1. Compare your placings to official placings.

EXAMPLE: Official Placings Your placings

3 - 2 - 1 - 4 3 - 4 - 1 - 2
4 2 2 (cuts)

2. Write your placings as pairs.

EXAMPLE: 3/4 4/1 1/2

3/1 4/2

3/2

3. Use cuts to calculate points.

   a. Compare each pair you placed to the corresponding pair in the official placing.

   b. Count zero points for each matching pair.

   c. Count points for pairs that do not match by adding cuts that fall between the paired numbers.

   d. Total the points for all pairs.

   EXAMPLE:

   Official Placings Your placings

   3 - 2 - 1 - 4 3 - 4 - 1 - 2
   4 2 2 (cuts)

   3/4 = 0 points 4/1 = 2 points 1/2 = 2 points

   3/1 = 0 points 4/2 = 2 + 2 = 4 points

   3/2 = 0 points

   Total of points = 2 + 4 + 2 = 8

4. Subtract total points from 50 to find placing score.

EXAMPLE: Subtract 8 points from 50 points = 42 points

Your score = 42

☑ **NOTE:** If the class had placed 2 - 3 - 1 - 4, there would have been a top switch, which would have cost four points, making your score 46 points. If your placing was 3 - 1 - 2 - 4 the switch on the middle pair would cost you 2 points. Your score would be 48.

OBJECTIVE 12

Complete Assignment Sheet 1.

OBJECTIVE 13

Optional Activities/
Resources in
Instructor's Guide

State the purpose of giving reasons for placings.

- Presenting your opinion and justification for placing a class of livestock

OBJECTIVE 14

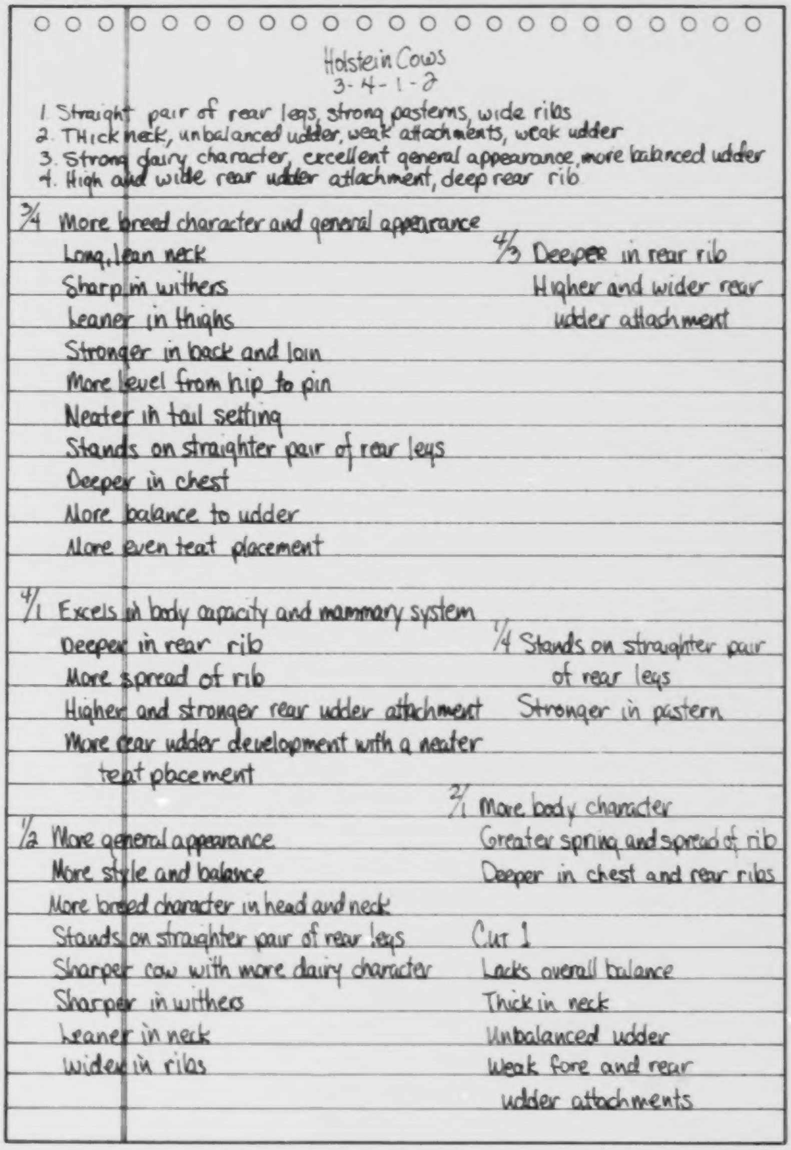
Optional Activities/
Resources in
Instructor's Guide

Arrange in order steps to follow in taking notes for oral reasons for placings.

1. Identify the class.
2. Write your placings at the top of the page.
3. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers.
4. Take notes on each animal to identify strong points and criticisms of each.
5. Take notes by pairs, giving advantages as well as grants.

☑ **NOTE:** It is important to learn to take good notes in preparation for giving oral reasons for your placings. You may judge several classes in a day and give the reasons for your placings at a later time. By taking good notes, you can develop a good set of reasons. Write your notes in a 6-by-9-inch stenographer's spiral notebook, and use a pencil.

FIGURE 29



Holstein Cows
3-4-1-2

1. Straight pair of rear legs, strong pasterns, wide ribs
2. THick neck, unbalanced udder, weak attachments, weak udder
3. Strong dairy character, excellent general appearance, more balanced udder
4. High and wide rear udder attachment, deep rear rib

3/4 More breed character and general appearance
Long, lean neck
Sharp in withers
Leaner in thighs
Stronger in back and loin
More level from hip to pin
Neater in tail setting
Stands on straighter pair of rear legs
Deeper in chest
More balance to udder
More even teat placement

4/3 Deeper in rear rib
Higher and wider rear udder attachment

4/1 Excels in body capacity and mammary system
Deeper in rear rib
More spread of rib
Higher and stronger rear udder attachment
More rear udder development with a neater teat placement

1/4 Stands on straighter pair of rear legs
Stronger in pastern

1/2 More general appearance
More style and balance
More breed character in head and neck
Stands on straighter pair of rear legs
Sharper cow with more dairy character
Sharper in withers
Leaner in neck
Wider in ribs

2/1 More body character
Greater spring and spread of rib
Deeper in chest and rear ribs

Cut 1
Lacks overall balance
Thick in neck
Unbalanced udder
Weak fore and rear udder attachments

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OBJECTIVE 15

Optional Activities/
Resources in
Instructor's Guide

Select from a list techniques for presenting oral reasons for placings.

- Speak with a clear, powerful voice.
- Open reasons with a precise opening statement.
- Never carry notes into the reason room.
- Stand erect, with feet aligned with shoulders.
- Stand 4 to 8 feet from the reason-taker.
- Talk in a firm voice without shouting.
- Use good voice control, both in speed and volume.

  ☑ **NOTE:** Emphasis on certain points is very important in giving reasons.

- Present the reason-taker with an accurate picture of the animal.
- Avoid body movement.

  ☑ **NOTE:** Some head movement is acceptable.

- Use identification characteristics whenever possible to let the reason-taker know that you did see the class.
- Look the reason-taker squarely in the eye.
- Stay within the allotted two minutes.

  ☑ **NOTE:** The reasons should last from one minute and twenty seconds to one minute and forty-five seconds.

- Avoid using more than three terms in succession.
- Never conclude reasons with, "For these reasons, I placed this class . . ."

OBJECTIVE 16

Optional Activities/
Resources in
Instructor's Guide

Arrange in order steps to follow in presenting oral reasons for placings.

☑ **NOTE:** A class of four animals is divided into three pairs: a top or initial pair, a middle or intermediate pair, and a bottom or concluding pair. The following examples are for a set of reasons for a placing of 1 - 2 - 3 - 4.

1. Present opening statement.

   EXAMPLE: Give the name of class and how it was placed. Give criticisms and outstanding good points.

   ☑ **NOTE:** In some cases, a general statement about the entire class may be more applicable.

2. Discuss the top pair.

   EXAMPLE: Give reasons for placing 1 over 2, using comparative terms. Give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1. Give criticisms of 2, using descriptive terms.

   ☑ **NOTE:** In close placings, several grants would be desirable as long as they are true. Always criticize an animal on its own merits rather than by comparing it to the animal placed above.

3. Discuss the middle pair.

   EXAMPLE: Give reasons for placing 2 over 3 and give grants for 3 over 2. Give criticisms of 3.

4. Discuss the bottom pair.

   EXAMPLE: Give reasons for placing 3 over 4, and give grants for 4 over 3.

OBJECTIVE 17	**Complete Assignment Sheet 2.**
OBJECTIVE 18	**Complete Assignment Sheet 3.**
OBJECTIVE 19	**Complete Assignment Sheet 4.**
OBJECTIVE 20	**Complete Assignment Sheet 5.**
OBJECTIVE 21	**Complete Assignment Sheet 6.**
OBJECTIVE 22	**Complete Assignment Sheet 7.**
OBJECTIVE 23	**Complete Assignment Sheet 8.**
OBJECTIVE 24	**Complete Assignment Sheet 9.**

ASSIGNMENT SHEET 1

DAIRY BREEDS AND SELECTION

D5

Name ______________________ Score ________

OBJECTIVE 12

Compute placing scores.

INTRODUCTION

Before contestants judge a class of dairy animals, a group of officials judge the class and identify how the class should be placed. This is referred to as the official placing. There is a total of fifty possible points in a judging class. There are 24 possible placings on any given class. The officials determine cuts, or point variations, on each class. These are used to compute your score.

INSTRUCTIONS

Operation and Calculation
- Calculate with whole numbers

Math Application
- Solve word problems

Work the following problems.

1. Class 2, Jersey heifers. Official Placings are 4 - 2 - 1 - 3 with cuts of 5, 4, 2. You placed the class 1 - 4- 3 - 2. What is your placing score?

   Your score = ____________

2. Class 1, Holstein aged cows. Official placings are 1 - 3 - 4 - 2 with cuts of 5, 5, 5. You placed the class 3 - 1 - 2 - 4. What is your placing score?

   Your score = ____________

3. Class 3, Ayrshire heifers. Official placings are 4 - 3 - 1 - 2 with cuts of 3, 4, 2. You placed the class 3 - 4 - 1 - 2. What is your placing score?

   Your score = ______________

4. Class 4, Gurnsey heifers. Official placings are 1 - 3 - 4 - 2 with cuts of 4, 4, 4. You placed the class 1 - 2 - 3 - 4. What is your placing score?

   Your score = ______________

ASSIGNMENT SHEET 2

DAIRY BREEDS AND SELECTION

D5

Name ______________________________ Score __________

OBJECTIVE 17

Evaluate animals using the Dairy Cow Unified Score Card criteria.

INTRODUCTION

The Dairy Cow Unified Score Card indicates the points or criteria to be considered in selecting dairy animals and the relative emphasis that should be given to each point. A good dairy cattle judge must learn to use the card when evaluating cattle.

INSTRUCTIONS

Using the Dairy Cow Unified Score Card, evaluate the strengths and weaknesses of each cow shown in the following pictures. List desirable and undesirable traits.

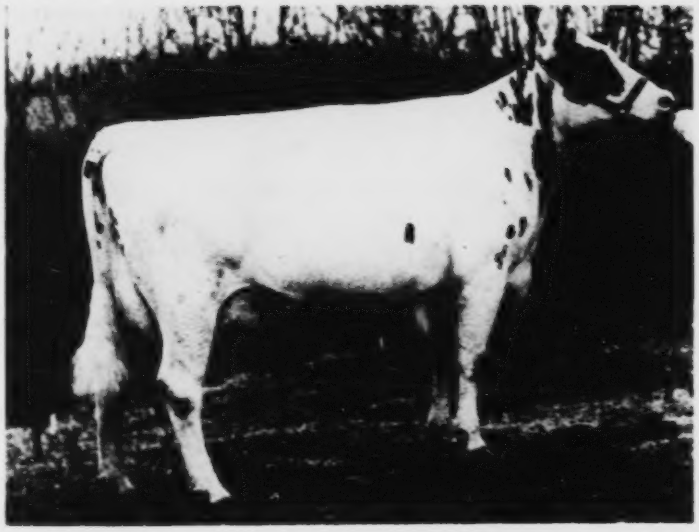
Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

1.

FIGURE 1



Courtesy: *The Ayrshire Digest*, Brattleboro, Vermont.

Desirable Traits	Undesirable Traits

2.

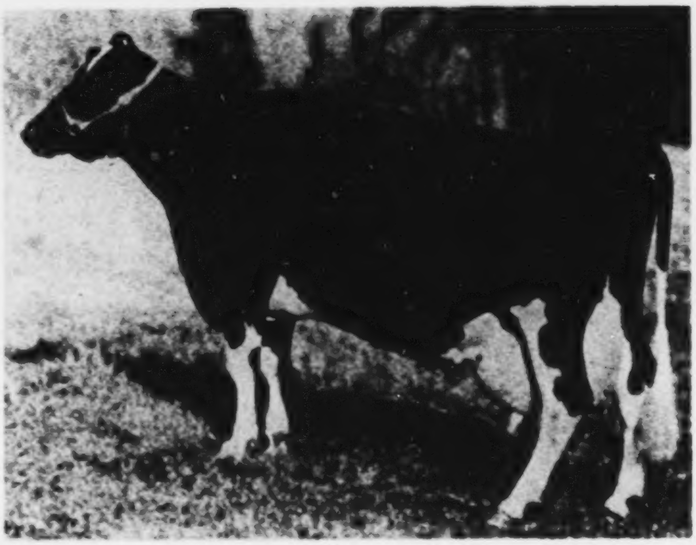
FIGURE 2

Courtesy: Agri Graphics, Ltd., Cary, Illinois.

Desirable Traits	Undesirable Traits

3.

FIGURE 3

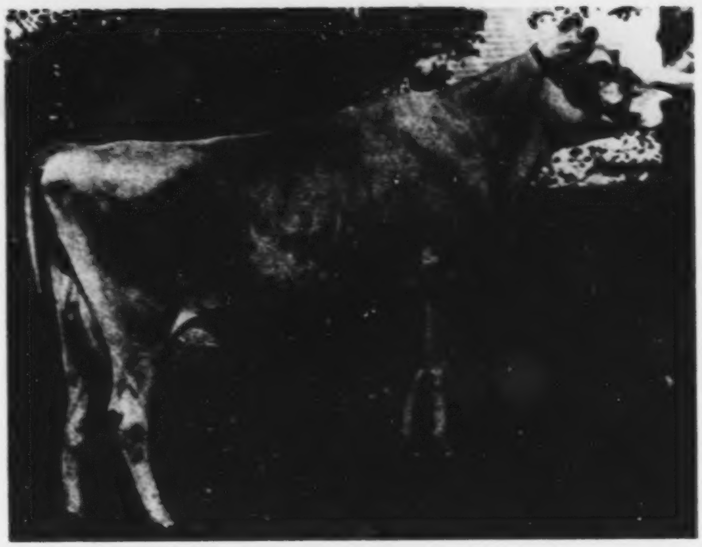


Courtesy: Holstein Association, Brattleboro, Vermont.

Desirable Traits	Undesirable Traits

4.

FIGURE 4

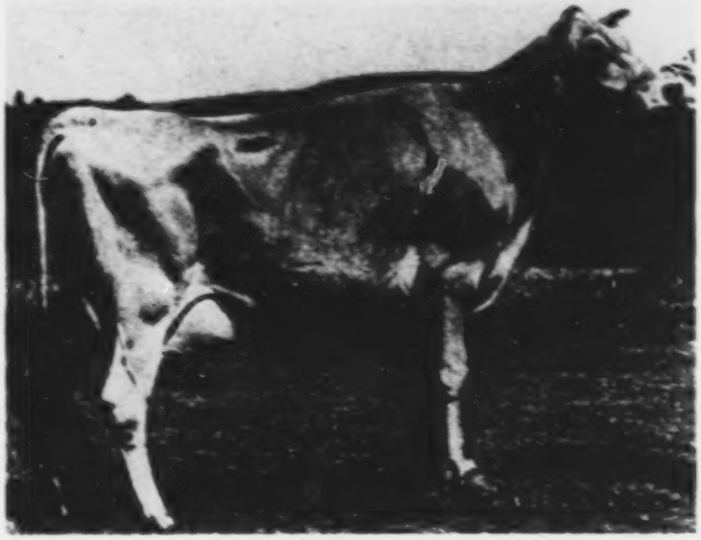


Courtesy: American Jersey Cattle Club, Reynoldsburg, Ohio.

Desirable Traits	Undesirable Traits

5.

FIGURE 5

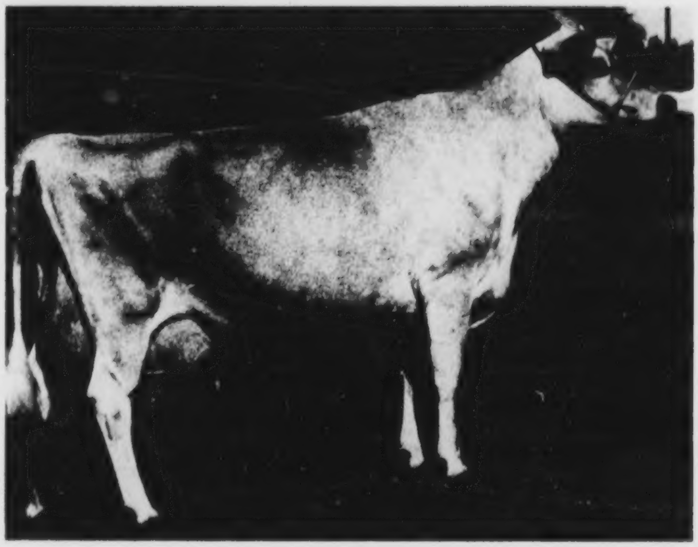


Courtesy: American Jersey Cattle Club, Reynoldsburg, Ohio.

Desirable Traits	Undesirable Traits
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________

6.

FIGURE 6



Courtesy: American Jersey Cattle Club, Reynoldsburg, Ohio.

Desirable Traits	Undesirable Traits
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________
______________________	______________________

Name ________________________________ Score __________

OBJECTIVE 18

Judge classes of cows using the point system from the Dairy Cow Unified Score Card.

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

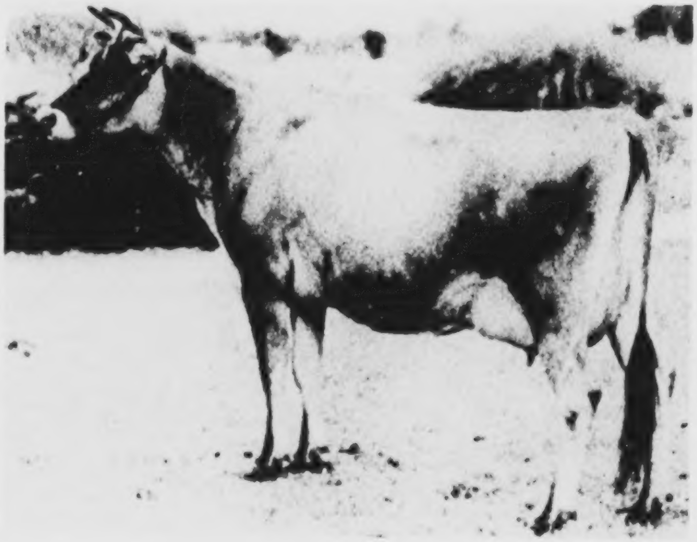
Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

Using the four parts of the Dairy Cow Unified Score Card, evaluate each animal in the class. Following each class is a box. The numbers at the top of each column represent the numbers of the cows in the class. In the left column are the four parts of the Dairy Cow Unified Score Card with the perfect score for each part. GA stands for general appearance, DC for dairy character, BC for body capacity, and U for udder. Judge each class, write point evaluations in the boxes, and write your placing.

Class 1, Jersey cows

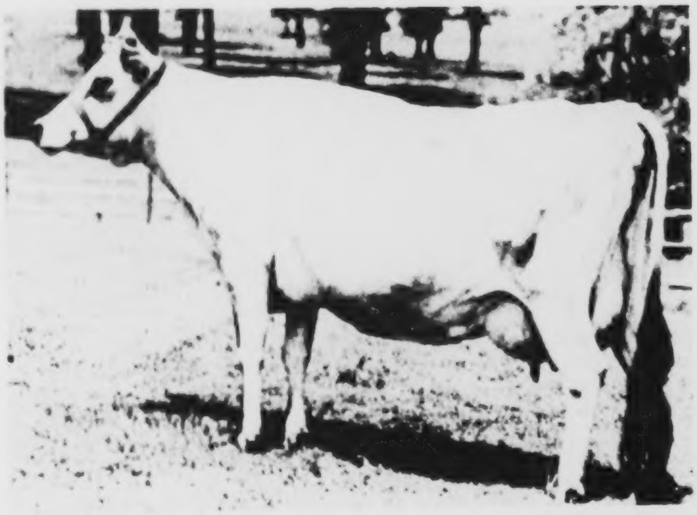
1.

FIGURE 1



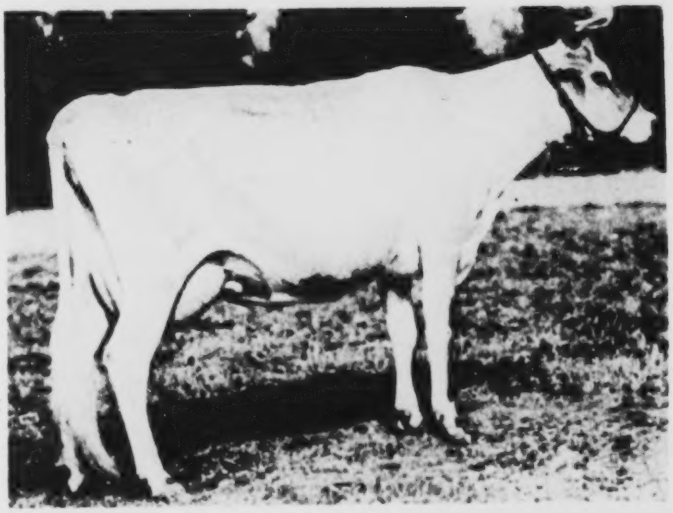
2.

FIGURE 2



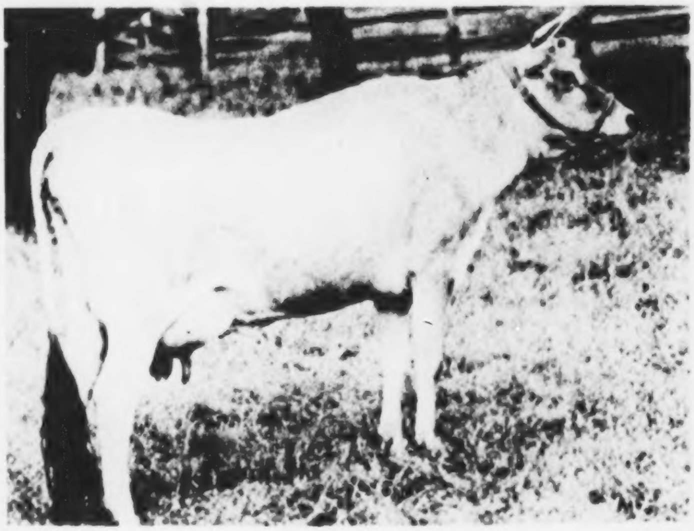
3.

FIGURE 3



4.

FIGURE 4



Class 1 Jersey cows				
	1	2	3	4
GA 35 points				
DC 20 points				
BC 10 points				
U 35 points				
Totals				

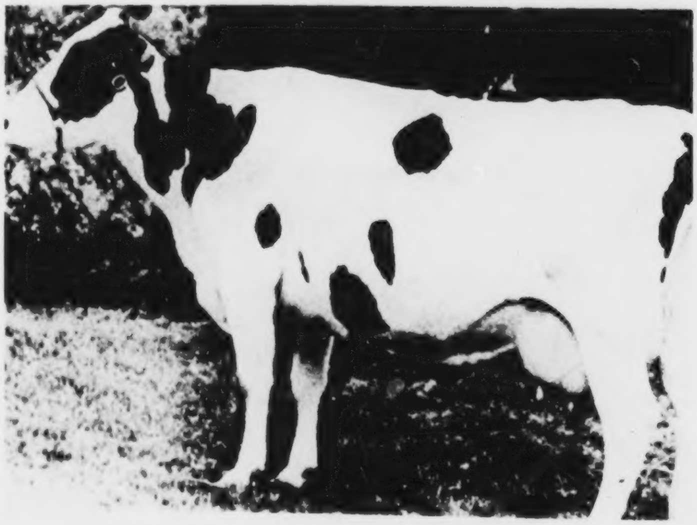
Placing ____________________

Photographs courtesy of American Jersey Cattle Club, Reynoldsburg, Ohio.

Class 2 Holstein cows

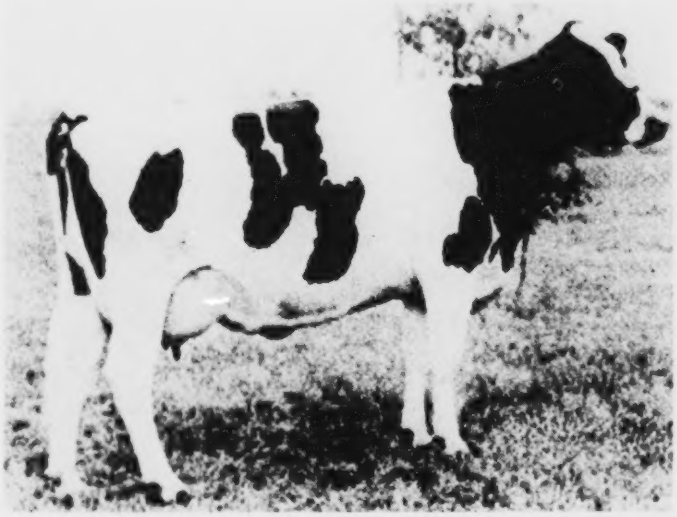
1.

FIGURE 5



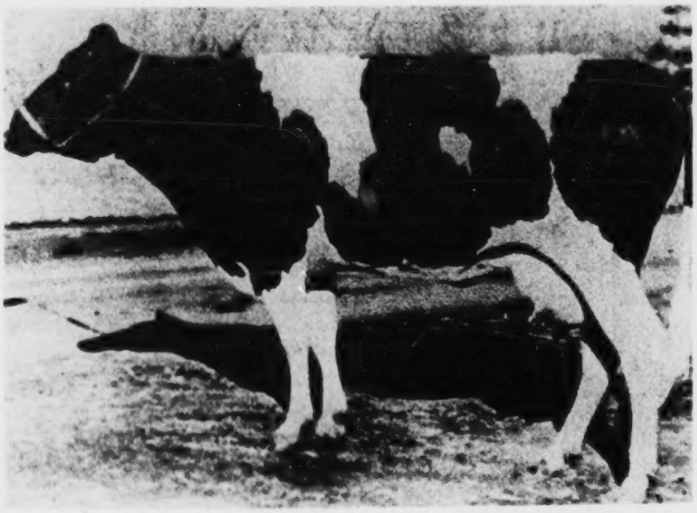
2.

FIGURE 6



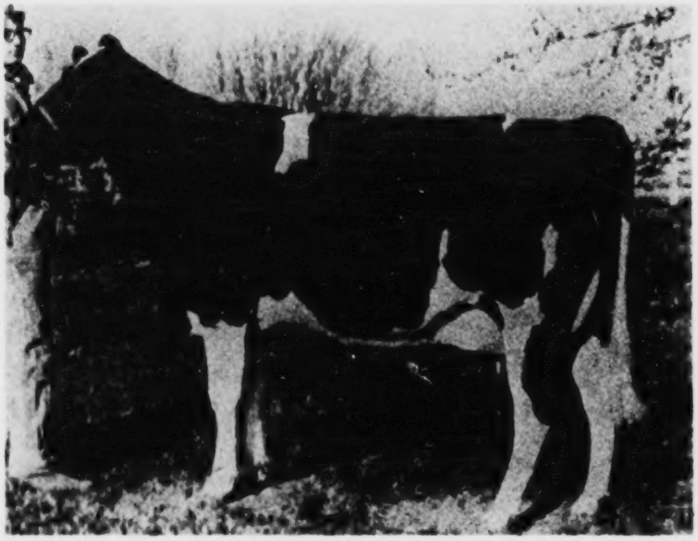
3.

FIGURE 7



4.

FIGURE 8



Class 2 Holstein cows				
	1	2	3	4
GA 35 points				
DC 20 points				
BC 10 points				
U 35 points				
Totals				

Placing ____________________

Photographs courtesy of Holstein Association of America, Brattleboro, Vermont.

ASSIGNMENT SHEET 4

DAIRY BREEDS AND SELECTION

D5

Name ______________________________ Score __________

OBJECTIVE 19

Judge a production class of dairy cattle.

INSTRUCTIONS

The instructor or a junior or senior agricultural education student has already placed the officials on a production class of dairy cattle. You must now judge the class. Write your placings and take notes on the class.

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

Class name ________________________ Placings ________

Take notes on the class.

1. ____

____

____

____

____

2. ____

____

____

____

____

3. ____

____

____

____

____

4. ______________________________

____

____

____

____

ASSIGNMENT SHEET 5

DAIRY BREEDS AND SELECTION

D5

Name ______________________ Score __________

OBJECTIVE 20

Judge an open heifer class of dairy cattle.

INSTRUCTIONS

The instructor or a junior or senior agricultural education student has already placed the officials on an open heifer class of dairy cattle. You must now judge the class. Write your placings and take notes on the class.

Class name ______________________ Placings ________

Take notes on the class.

1. ____

____

____

____

____

2. ____

____

____

____

____

3. ____

____

____

____

____

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

4. ____________________

ASSIGNMENT SHEET 6

DAIRY BREEDS AND SELECTION

D5

Name ______________________________ Score __________

OBJECTIVE 21

Evaluate a set of written reasons for placing a class of dairy cattle.

INTRODUCTION

In writing reasons for placing classes of dairy cattle it is essential that you understand how the terms for desirable and undesirable traits are used and how they are tied together. You must also be able to evaluate placing reasons for clarity, correct style, and correctness.

INSTRUCTIONS

Circle the terms for desirable traits, and underline the terms for undesirable traits in the set of written reasons below.

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Draw conclusions
- Predict results/outcomes

HOLSTEIN COW REASONS

I placed this class of Holstein cows 3 - 4 - 1 - 2. I placed 3 over 4, considering this a rather easy placing because 3 shows more dairy character and general appearance. She has a longer and leaner neck, sharper in the withers, leaner in the thighs. She is stronger in her back and loin, more level from hips to pins, neater in her tail setting, and stands on a straighter pair of rear legs. She is deeper in the chest and has more balance to the udder with a more even teat placement.

However, I would grant that 4 is deeper in the rear rib with a higher and wider rear-udder attachment. I would like to see my top cow, 3, with more stretch and length of barrel.

In my middle pair 4 goes over 1, and I considered this an easy placing. Four excels 1 in body capacity and mammary system being deeper in her rear rib, more spread of rib. Her udder extends higher and stronger in rear-udder attachment, more rear udder development, with a neater teat placement. I grant that 1 stands on a straighter pair of rear legs that are stronger in the pasterns.

In my bottom pair, I placed 1 over 2. I considered this a very close placing; but 1 has more general appearance than 2, having more style and balance, more breed character in her head and neck, and she stands on a straighter pair of rear legs. One is a sharper cow than 2 and has more dairy character, being sharper in the withers, leaner in the neck, and wider in the ribs.

I grant that 2 has more body capacity, having a greater spring and spread of rib and being deeper in both the chest and rear ribs; but I placed her last because she lacks the overall balance of 1. She is thick in her neck, and her udder is unbalanced with weak fore and rear udder attachments. Therefore, I leave my placings 3 - 4 - 1 - 2.

1. Are the reasons written in a clear, concise manner? ________

2. Did the reasons convince you that the class was placed correctly? ________

   Justify your answer. ________

   ____

   ____

3. Did the writer use correct terms for desirable and undesirable traits? ________

4. Did you find any terms for desirable or undesirable traits that lacked meaning or purpose? ________

   If so, name them. ________

   ____

   ____

5. Would you make changes in any of the placing reasons? ____

   Write your changes. ________

   ____

   ____

6. Could the placing reasons be given in less than two minutes?

7. Would the reason-taker be able to identify the animals from the judge's reasons? ______________________

Why or why not? ______________________

____

____

____

ASSIGNMENT SHEET 7

DAIRY BREEDS AND SELECTION

Name ________________________ Score __________

OBJECTIVE 22

Write a set of reasons for placing a class of dairy cattle.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 4
- Assignment Sheet 5

INSTRUCTIONS

Using the notes you took on previous Assignments Sheets, write your reasons for each class. After writing the reasons, go back through them. Determine if the reasons are convincing, whether the reasons separate the animals from each other, and whether you used appropriate judging terms.

Class name ______________________ Placings ________

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Composition
- Proofread and edit

Cognitive Activities
- Collect/record information
- Draw conclusions

Class name ______________________ Placings ________

____

____

____

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ASSIGNMENT SHEET 8

DAIRY BREEDS AND SELECTION

D5

Name ______________________________ Score __________

OBJECTIVE 23

Give a set of oral reasons for placing a class of dairy cattle.

INTRODUCTION

Giving reasons orally takes a lot of practice. Your reasons should describe to the reason-taker just how you placed the class. In order to obtain a good score, you must convince the reason-taker that your placings are correct.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 7

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Oral Presentation
- Use good speaking techniques
- Select/use words effectively
- Present appropriate appearance

Interactive Communications
- Give/follow oral directions
- Communicate with professional colleagues/associates

Select one of the previously written sets of reasons and be prepared to give the reasons orally. Read over your reasons several times. Do not attempt to memorize the reasons, just remember the good points of each animal and the grants. You should have a good opening statement. Stand in front of a mirror and practice your reasons several times.

1. For which class are you giving the reasons? ______________
2. How did you place the class? ______________
3. What is your opening statement? ______________

   ____
4. Have you studied the reasons, and can you present them without using any of your notes? ______________

   ____
5. What is your closing statement? ______________

   ____

ASSIGNMENT SHEET 9

DAIRY BREEDS AND SELECTION

D5

Name ______________________________ Score __________

OBJECTIVE 24

Use resource materials to locate information about a breed of dairy cattle.

INTRODUCTION

Individuals may select one breed of animal over another for many reasons. The bottom line for most breed selection is personal preference. The breed associations and their members have worked hard to improve their breeds of cattle. Many associations conduct research on feed conversion and carcass evaluation.

EQUIPMENT AND SUPPLIES

- Information received from breed associations
- Breed magazines and journals
- Other reference materials and books about cattle breeds

INSTRUCTIONS

Answer the following questions about the breed you have selected for your research.

1. Breed ______________________________________
2. Where did the breed originate? ____________________
3. What is the color pattern? ______________________
4. What are considered to be the strong points of the breed?

   ____

   ____

   ____

5. What are considered to be the weak points of the breed?

   ____

   ____

   ____

Reading Comprehension
- Gain factual information
- Draw conclusions
- React to written material

Research and Reference
- Select useful resources
- Find materials in library
- Use standard references
- Use in-book reference tools
- Use magazines and newspapers

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Composition
- Use complete sentences

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6. What is the name and address of the breed association?

7. When was the breed association formed? ________

8. How many animals have been recorded in the breed association?

9. Does the breed association publish a magazine or journal?

10. What is the name of the magazine or journal?

11. What is the average amount of milk produced in a lactation period?

12. What is the percent of butterfat? ________

13. Is the breed considered to be a large, medium, or small-sized breed?

14. What type of disposition does the breed have? ________

15. What are the average weights of the cows and bulls?

Cows ________ Bulls ________

16. What type of conformation does the breed have?

17. Is the breed considered to have good grazing ability? ________

18. Does the breed association conduct tests and research?

____

19. What is the name of the organization responsible for conducting the tests and research?

____

____

20. What is the average weight of the calves at birth? __________

21. Name an outstanding producing cow and include information about her.

Cow's name ______________________________

____

____

____

____

22. What is your opinion of the breed? ______________________________

____

____

____

____

____

____

____

____

____

____

____

23. If you were going into the dairy business would you select this breed? Justify your answer.

OBJECTIVE SHEET

LIGHT HORSE BREEDS AND SELECTION

D6

INTRODUCTION

In the early days the horse was a necessity. It was the primary means of transportation and was essential to various types of work. Today, many individuals are horse enthusiasts. People have turned to the horse industry for recreation. Riding horses has become a favorite weekend pastime for many families.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Read *Equine Purchase Examinations* by Glenn F. Anderson and Carolynn Taylor MacAllister, OSU Fact Sheet No. 9114.
WRITING:	Using this Fact Sheet as a basis, summarize the steps involved in examining a horse prior to its purchase. Include the things that must be looked for at each step. Your paper should be one to two pages long.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Identify breeds of light horses.
2. Label the parts of a horse.
3. Match types of horses to their correct uses.
4. Label common head markings.
5. Label common leg markings.
6. Match body colors to their correct descriptions.
7. Match to their correct definitions terms associated with judging.
8. Describe general traits to consider in judging a halter class of light horses.
9. Select from a list specific traits or points to look for when judging light horses.
10. Label common conformational faults of feet and legs.
11. State the purpose of the FFA placing card.
12. List the steps involved in computing placing scores.
13. Compute placing scores. (Assignment Sheet 1)
14. Write terms of comparison used in judging a halter class of light horses.
15. State guidelines for taking notes for oral reasons for placings.
16. Select from a list techniques for writing reasons for placings.
17. Select from a list techniques for presenting oral reasons for placings.
18. Evaluate two horses for comparable advantages. (Assignment Sheet 2)
19. Judge a halter class of light horses. (Assignment Sheet 3)
20. Write a set of reasons for placing a class of light horses. (Assignment Sheet 4)

21. Give a set of oral reasons for placing a class of light horses. (Assignment Sheet 5)

22. Use resource material to locate information related to the breed association, origin, color, and characteristics of a light horse breed. (Assignment Sheet 6)

INFORMATION SHEET

LIGHT HORSE BREEDS AND SELECTION

D6

OBJECTIVE 1

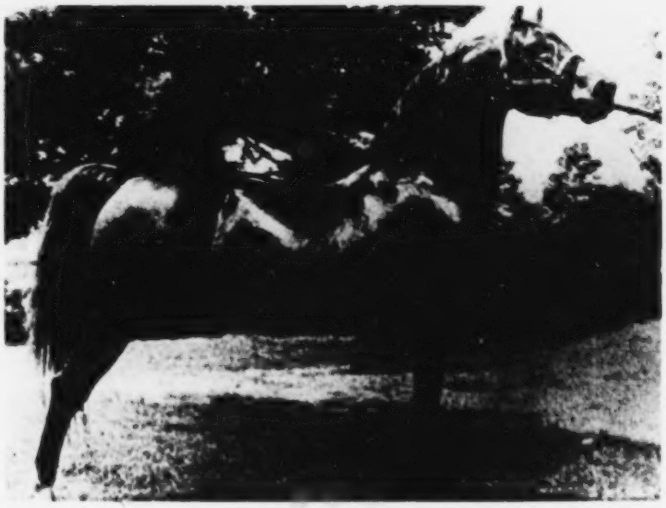
Identify breeds of light horses.

Optional Activities/ Resources in Instructor's Guide

WORDS YOU SHOULD KNOW	
breed	animals related by descent from common ancestors and visibly similar in most characteristics
colt	male foal
filly	female horse that has not reached reproduction age
foal	young horse under one year old
gelding	mature male horse that has been castrated
mare	mature female horse
stallion	mature male horse that has not been castrated

- Morgan

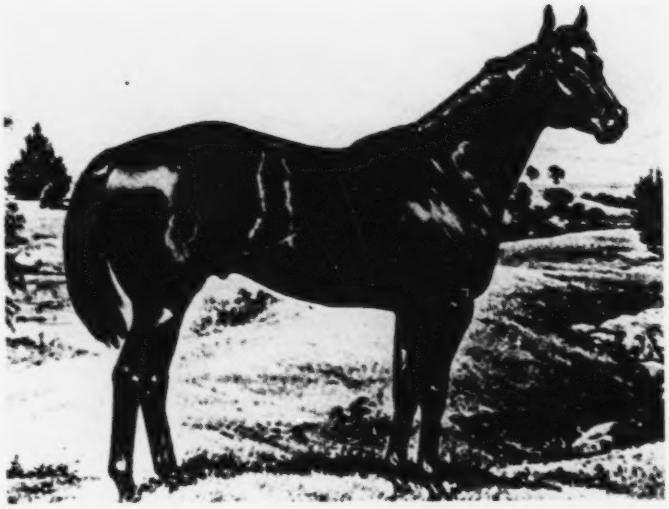
FIGURE 1



Courtesy: American Morgan Horse Association, Inc., Shelburne, Vermont

- Quarter horse

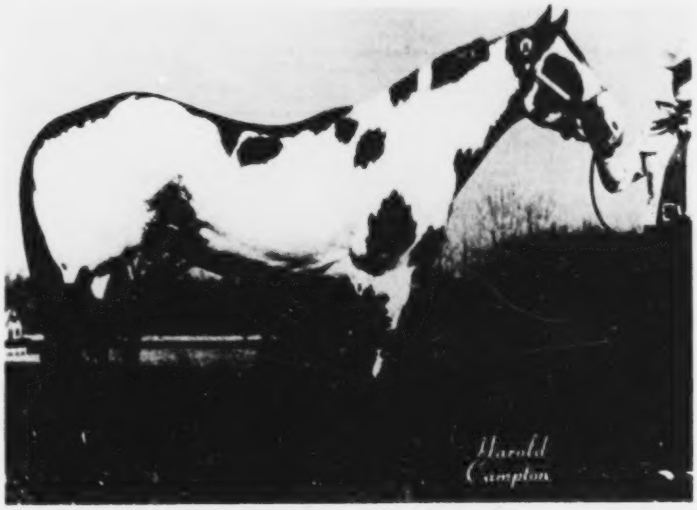
FIGURE 2



Courtesy: American Quarter Horse Association, Amarillo, Texas

- Paint

FIGURE 3



Courtesy: American Paint Horse Association, Fort Worth, Texas.

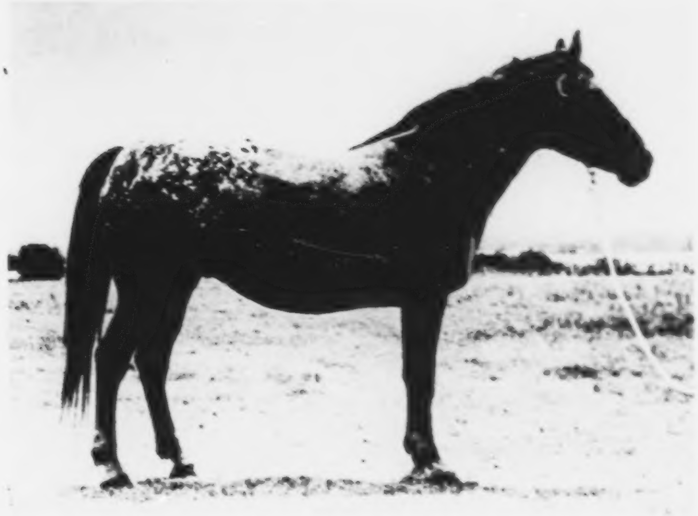
- Thoroughbred

FIGURE 4

Courtesy: Seth Hancock, Claiborne Farm, Paris, Kentucky.

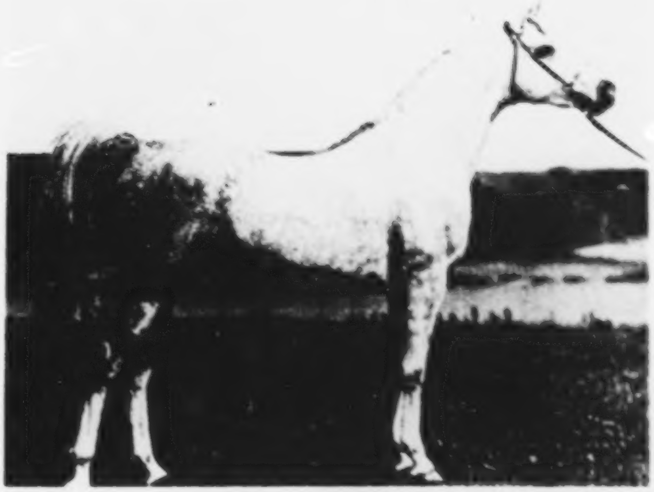
- Appaloosa

FIGURE 5



- Arabian

FIGURE 6



Courtesy: Bob and Joanne Thorndike, Jamal Arabians, Oroville, Washington.

OBJECTIVE 2

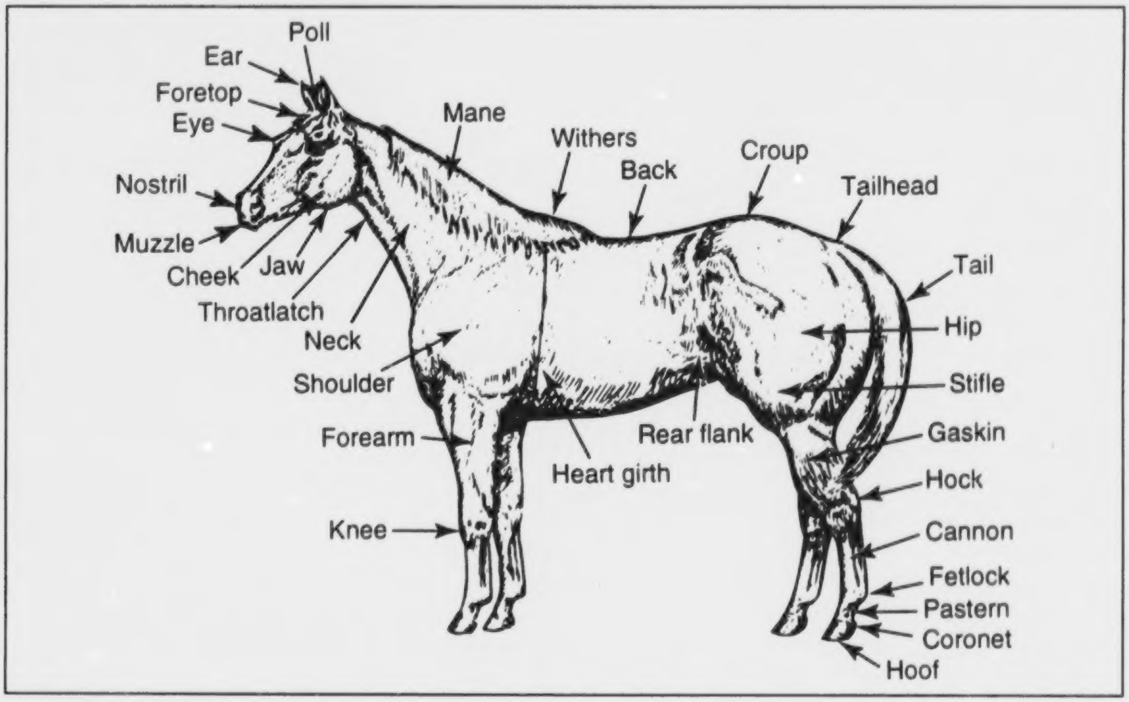
Label the parts of a horse.

Required Activities/
Resources
- Transparency Master 1

Optional Activities/
Resources in
Instructor's Guide

You will see a transparency showing the parts of a horse.

FIGURE 7



Poll
Ear
Foretop
Eye
Mane
Withers
Back
Croup
Tailhead
Nostril
Muzzle
Cheek
Jaw
Throatlatch
Neck
Shoulder
Tail
Hip
Stifle
Gaskin
Forearm
Rear flank
Heart girth
Hock
Knee
Cannon
Fetlock
Pastern
Coronet
Hoof

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OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

Match types of horses to their correct uses.

- **gaited** – trained to perform at the walk, trot, canter, slowgait, and rack for pleasure and exhibition

  ☑ **NOTE:** Walk, trot, canter, slowgait, and rack are used to describe the manner and speed that an animal is moving. Gaited horses are classified as either three- or five-gaited, according to whether they are trained to perform just the first three gaits, or all five.

- **harness** – trained to pull vehicles used for pleasure or exhibition

  ☑ **NOTE:** Harness classes usually pull two- or four-wheeled vehicles referred to as carts or buggies

- **jumping** – trained to jump high obstacles for pleasure or exhibition
- **stock** – trained to be used for pleasure, show, or general ranch work
- **racing** – trained to compete against other horses by running, pacing, or trotting

OBJECTIVE 4

Required Activities/
Resources
– Transparency Master 2

Optional Activities/
Resources in
Instructor's Guide

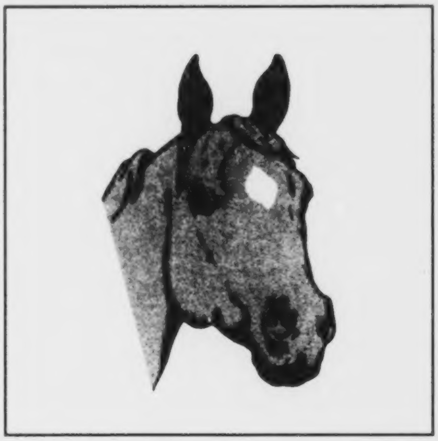
Label common head markings.

You will see a transparency showing the head markings of a horse.

- Star

  ☑ **NOTE:** A star is any white mark on the forehead, located above a line running from eye to eye.

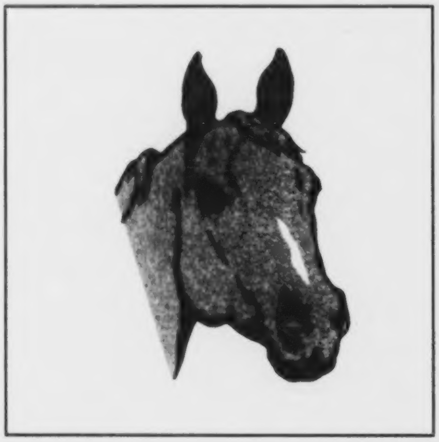
FIGURE 8



- Strip

  ☑ **NOTE:** A strip is a narrow white marking that extends from about the line of the eyes to the nostrils.

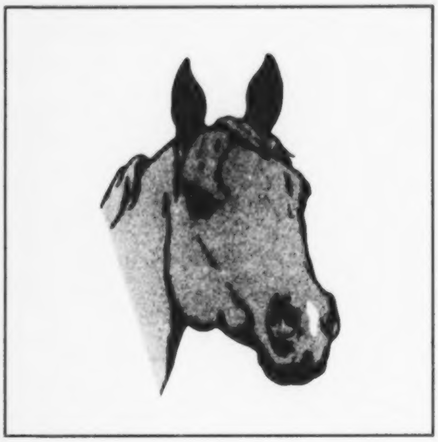
FIGURE 9



- Snip

  ☑ **NOTE:** This is a narrow patch of white down over the muzzle.

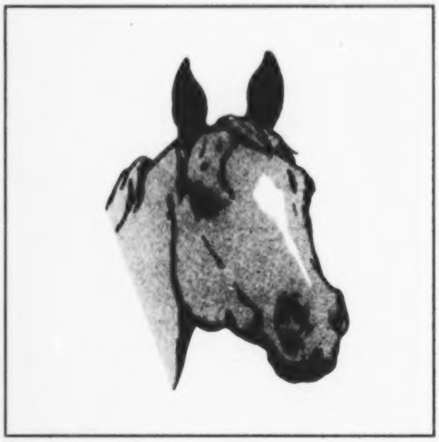
FIGURE 10



- Star and strip

  ☑ **NOTE:** This includes both the star and the strip. They may or may not be connected.

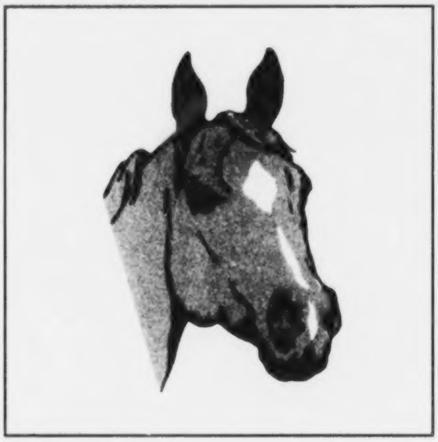
FIGURE 11



- Star, strip, and snip

  ☑ **NOTE:** This includes all three markings, they may or may not be connected.

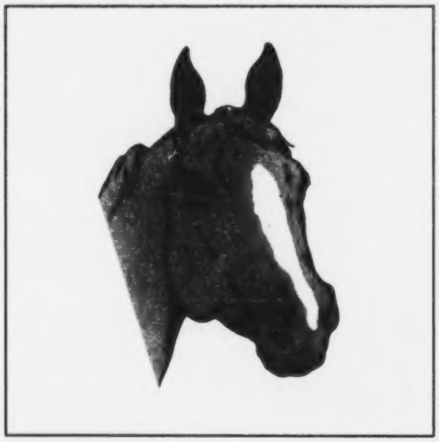
FIGURE 12



- Blaze

  ☑ **NOTE:** This is a wider patch of white down the face covering the full width of the nasal bones.

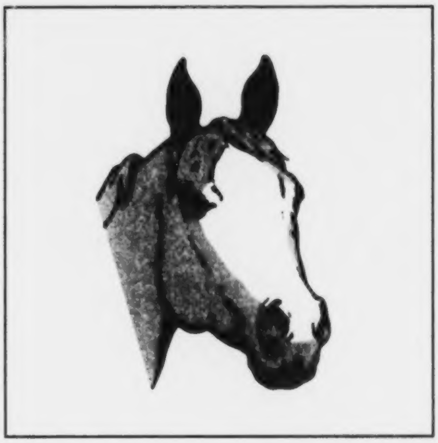
FIGURE 13



- Bald face

  ☑ **NOTE:** This is an even wider patch of white covering front of face, eyes, and nostrils.

FIGURE 14



Figures 8 - 14 used with permission of American Quarter Horse Association, Amarillo, Texas.

OBJECTIVE 5

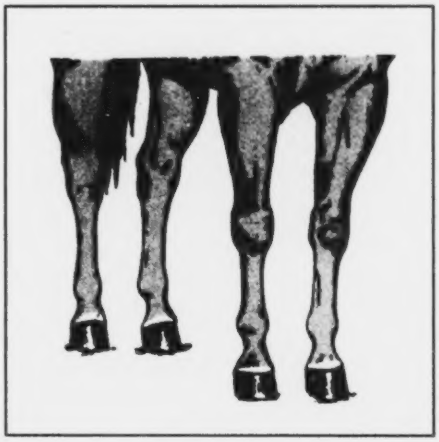
Optional Activities/
Resources in
Instructor's Guide

Label common leg markings.

- Coronet

  ☑ **NOTE:** The coronet marking is a white strip covering the coronet band.

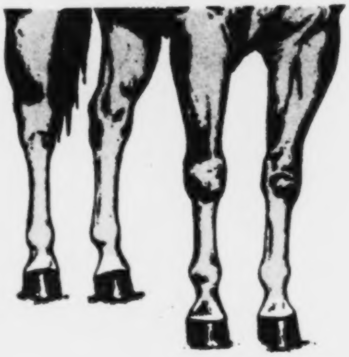
FIGURE 15



- Half pastern

☑ **NOTE:** The half pastern marking is a white area that covers half the pastern above the coronet.

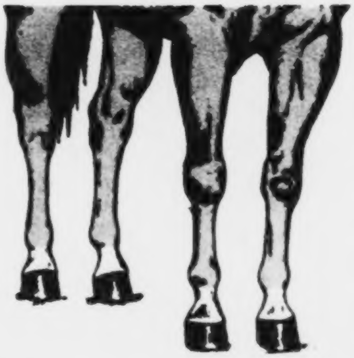
FIGURE 16



- Pastern

☑ **NOTE:** The pastern marking is a white area extending from the coronet to and including the pastern.

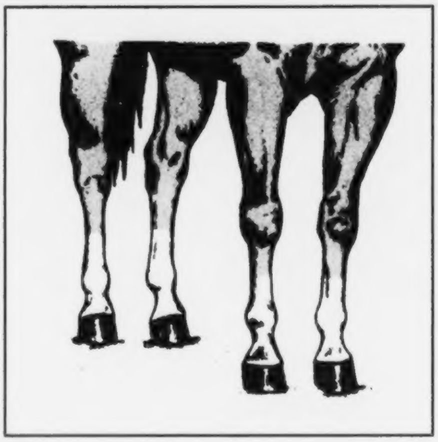
FIGURE 17



- Sock or half-stocking

☑ **NOTE:** The sock or half-stocking is a white area from the coronet to the middle of the cannon.

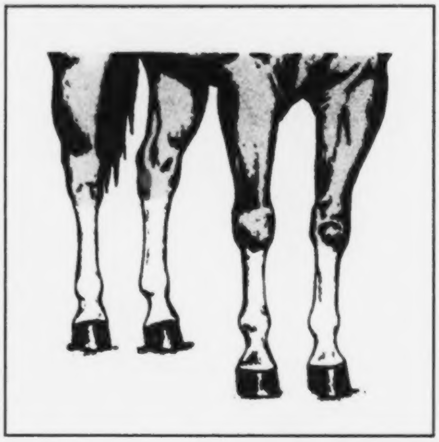
FIGURE 18



- Stocking

☑ **NOTE:** The stocking is a white area from the coronet to the knee.

FIGURE 19



Figures 15 - 19 used with permission of the American Quarter Horse Association, Amarillo, Texas.

OBJECTIVE 6

Optional Activities/
Resources in
Instructor's Guide

Match body colors to their correct descriptions.

- **Appaloosa** – solid color or mottled roan foreparts with lighter color over the loin and hips with egg-shaped spots; some are white with spots over the entire body
- **bay** – ranges from light yellowish or dark tan to almost brown
- **black** – black color with fine black hair on the muzzle
- **blue roan** – black, white, and yellow hairs intermingled
- **brown** – dark to almost black with tan or brown hairs on the muzzle or flanks
- **buckskin** – form of dun-yellowish or bold body color with a black mane and tail, usually black on lower legs
- **chestnut or sorrel** – ranges from light washy yellow to a dark liver color
- **dappled** – light or dark spots over the basic body color
- **dun** – dull golden color with black points on the mane and tail
- **gray** – mixture of white and black hairs
- **Palomino** – golden body color, varying from light yellow to a bright copper color, with a white mane and tail
- **Pinto or paint** – white in combination with any other color

  ☑ **NOTE:** Pinto coloring can be on any breed.

- **roan** – red, white, and yellow hairs intermingled

OBJECTIVE 7

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Match to their correct definitions terms associated with judging.

Start a discussion by asking "Why is soundness important to the horse industry?"

- **balance** – overall appearance of the horse; the degree that all body parts are in proportion
- **blemish** – abnormality that does not affect serviceability of the horse

- **coarse** – lacking quality and refinement
- **conformation** – structure and arrangement of parts as they form the body of the horse
- **cuts** – points assigned to a judging class that separate animals by pairs
- **grant** – recognition that an animal has desirable traits, but that these traits are not acceptable to be used any higher in the class
- **quality** – fineness of features, fine hair, and an absence of coarseness
- **reasons** – written or oral justification of how a class of animals was placed
- **soundness** – freedom from any abnormal deviation in structure or function that interferes with the usefulness of the horse
- **stylish** – having a pleasing, graceful, alert general appearance
- **type** – arrangement of the body parts into distinct recognizable patterns

  ☑ **NOTE:** All horses have the same basic conformation, but each breed has a distinct conformation type that makes it different from other breeds.

- **unsoundness** – serious abnormality that affects the serviceability of the horse

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

Describe general traits to consider in judging a halter class of light horses.

WORDS YOU SHOULD KNOW	
halter class	class of horses exhibited for purpose of judging them on conformation
performance class	any class of horses exhibited under saddle

- action – usefulness and soundness of animal
- conformation – correctness of structure in feet and legs, muscling, and the overall physical structure
- quality and style – impression determined by refinement, alertness, carriage, and sex character
- type – overall characteristics that make an animal useful for its intended purpose

OBJECTIVE 9

Optional Activities/
Resources in
Instructor's Guide

Select from a list specific traits or points to look for when judging light horses.

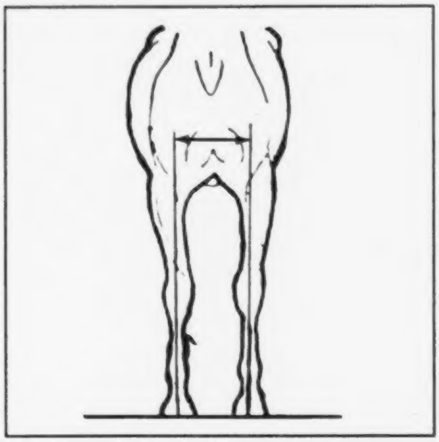
- Side
  - ☐ Type and balance
  - ☐ Muscling
  - ☐ Alignment of feet and legs
  - ☐ Amount and kind of bone
  - ☐ Breed character
  - ☐ Quality and smoothness
  - ☐ Style
  - ☐ Size

- ☐ Slope of shoulder
- ☐ Length and strength of back
- ☐ Length of rear quarter
- ☐ Length and set of neck, head, and ears
- ☐ Depth of heart girth

- Front
  - ☐ Muscling
  - ☐ Alignment of front feet and legs
  - ☐ Breed character
  - ☐ Quality and smoothness
  - ☐ Depth and width of chest

☑ **NOTE:** Width of chest is the distance between the front legs measured from the center of one leg to the center of the other leg.

FIGURE 20



Used with permission of the Vocational Agriculture Service, University of Illinois at Urbana - Champaign.

- Rear
  - ☐ Muscling (stifle, gaskin)
  - ☐ Alignment of rear feet and legs
  - ☐ Quality and smoothness
  - ☐ Width
- Movement
  - ☐ Alignment of action
  - ☐ Ease and smoothness of action
  - ☐ Absence of lameness
- Close inspection
  - ☐ Soundness
  - ☐ Muscling
  - ☐ Quality of feet and legs
  - ☐ Withers

OBJECTIVE 10

Required Activities/
Resources
- Transparency
  Masters 3 - 5

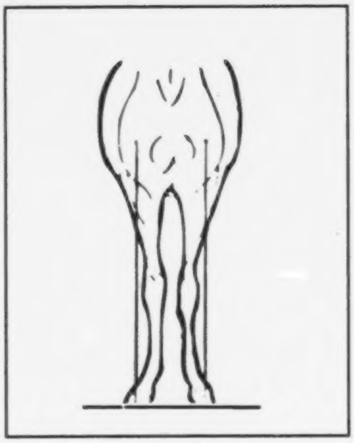
Label common conformational faults of feet and legs.

You will see transparencies showing various views of feet and legs.

Front View

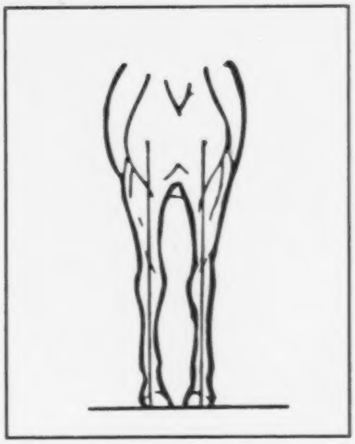
- Toes out

FIGURE 21



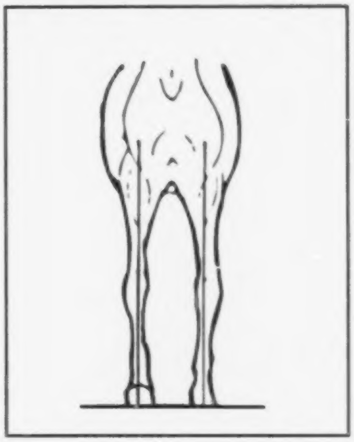
- Toes in

FIGURE 22



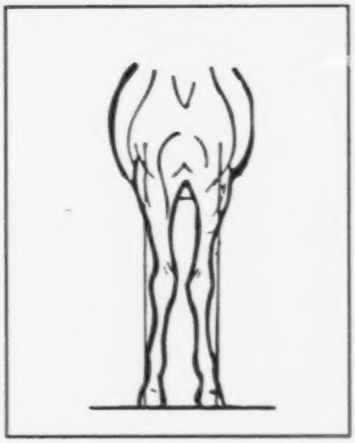
- Out at the knee

FIGURE 23



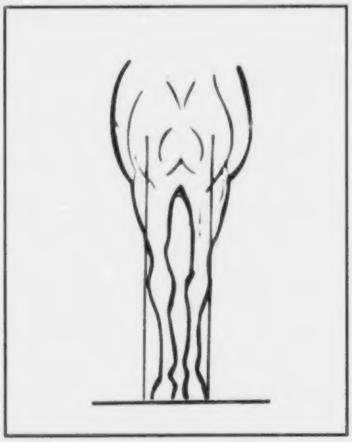
- In at the knee

FIGURE 24



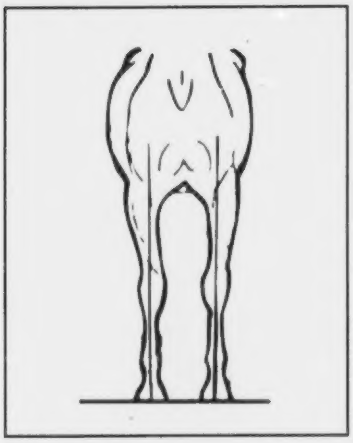
- Stands close

FIGURE 25



- Ideal

FIGURE 26

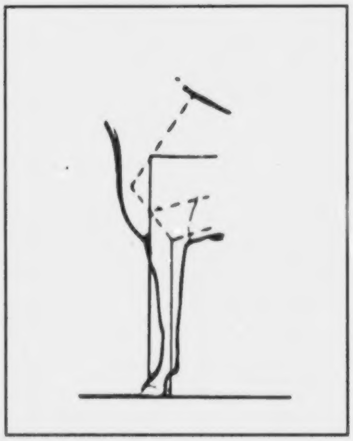


Figures 21 - 26 used with permission of the Vocational Agriculture Service, University of Illinois at Urbana - Champaign.

Side view (front legs)

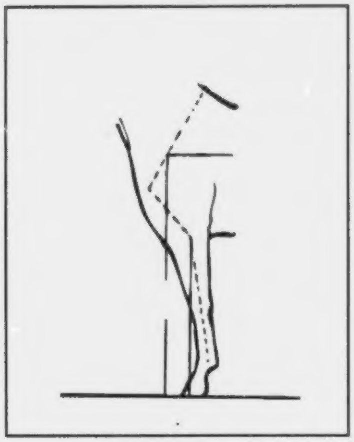
- Ideal

FIGURE 27



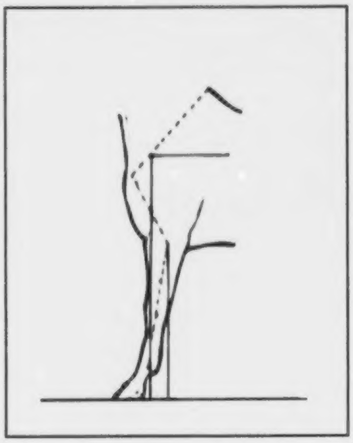
- Camped under

FIGURE 28



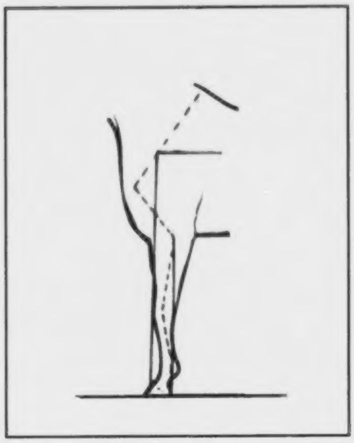
- Camped out

FIGURE 29



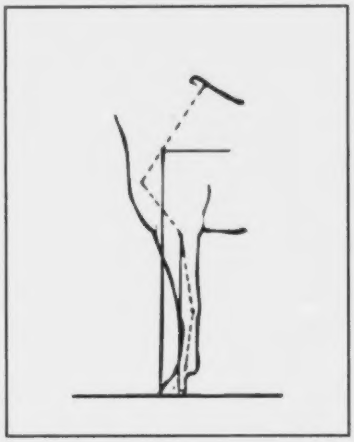
- Over at the knee

FIGURE 30



- Back at the knee

FIGURE 31

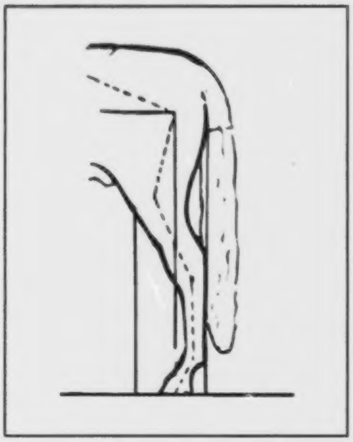


Figures 27 - 31 used with permission of the Vocational Agriculture Service, University of Illinois at Urbana - Champaign.

Side view (hind legs)

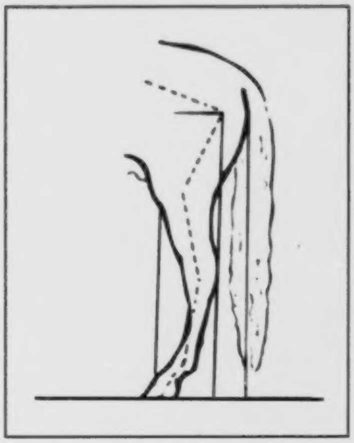
- Ideal

FIGURE 32



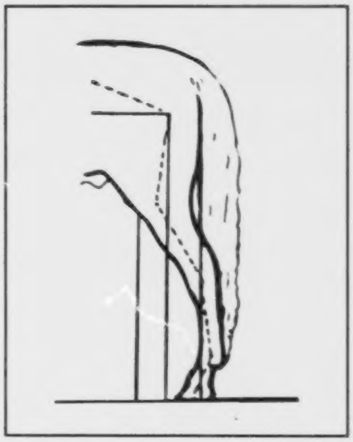
- Stands under

FIGURE 33



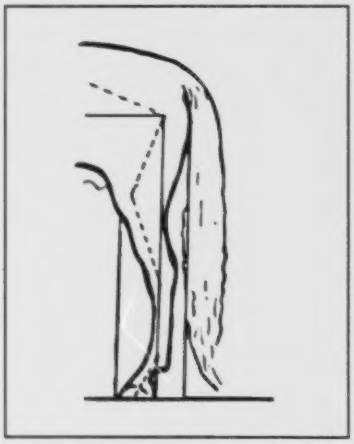
- Camped out

FIGURE 34



- Hind legs too straight

FIGURE 35

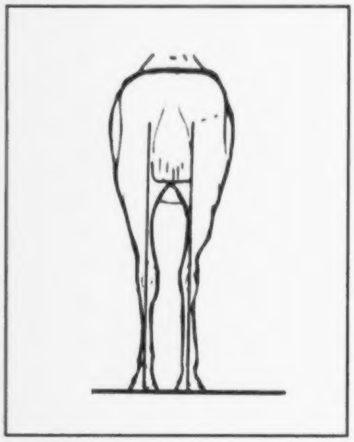


Figures 32 - 35 used with permission of the Vocational Agriculture Service, University of Illinois at Urbana - Champaign.

Hind view

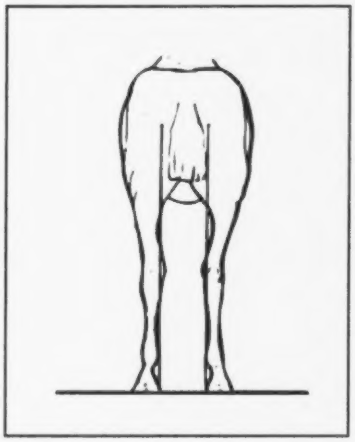
- Ideal

FIGURE 36



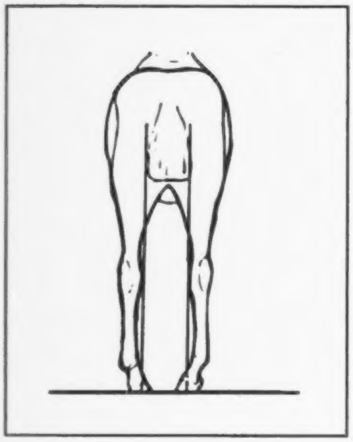
- Stands wide

FIGURE 37



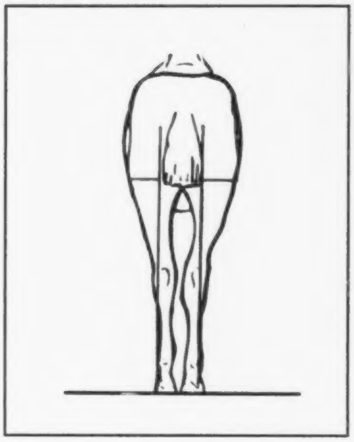
- Out at hocks

FIGURE 38



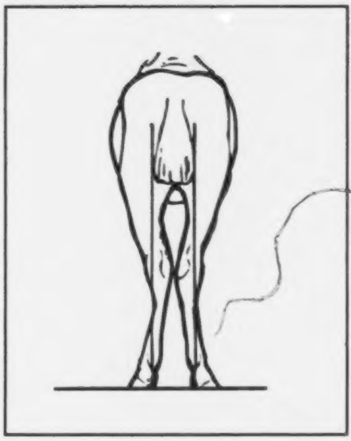
- Stands close

FIGURE 39



- In at hocks

FIGURE 40



Figures 36 - 40 used with permission of the Vocational Agriculture Service, University of Illinois at Urbana - Champaign.

OBJECTIVE 11

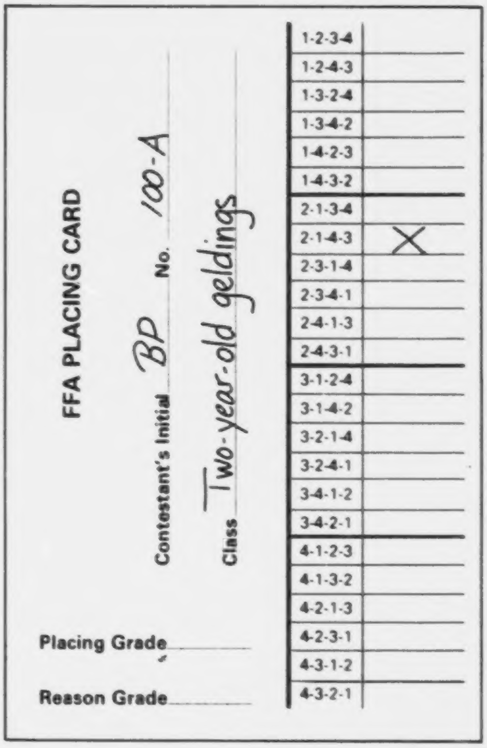
Optional Activities/
Resources in
Instructor's Guide

State the purpose of the FFA placing card.

- Identify the judge
- Record the placing
- Relate to officials how the class was placed

☑ **NOTE:** Fill out the card in pencil, and write clearly. An incorrectly written card can cause a team to lose a contest.

FIGURE 41



FFA PLACING CARD

Contestant's Initial BP No. 100-A

Class Two-year-old geldings

Placing Grade

Reason Grade

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	X
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

OBJECTIVE 12

Optional Activities/
Resources in
Instructor's Guide

List steps involved in computing placing scores.

☑ **NOTE:** There are always four animals in a livestock class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.

1. Compare your placings to official placings.

EXAMPLE:	Official Placings	Your placings
	1 - 4 - 3 - 2 2 5 4 (cuts)	1 - 2 - 3 - 4

2. Write your placings as pairs.

EXAMPLE: 1/2 2/3 3/4

1/3 2/4

1/4

3. Use cuts to calculate points.

   a. Compare each pair you placed to the corresponding pair in the official placing.

   b. Count zero points for each matching pair.

   c. Count points for pairs that do not match by adding cuts that fall between the paired numbers.

   d. Total the points for all pairs.

   EXAMPLE:

Official Placings	Your placings
1 - 4 - 3 - 2 2 5 4 (cuts)	1 - 2 - 3 - 4

   1/2 = 0 points 2/3 = 4 points 3/4 = 5 points

   1/3 = 0 points 2/4 = 5 + 4 = 9 points

   1/4 = 0 points

   Total of points = 4 + 9 + 5 = 18

4. Subtract total points from 50 to find placing score.

EXAMPLE: Subtract 18 points from 50 points = 32 points

Your score = 32

☑ **NOTE:** If the class had placed 4 - 1 - 3 - 2, there would have been a top switch, which would cost two points, making your score 48 points. If the placing had been 1 - 3 - 4 - 2, it would have cost 5 points, making your score 45 points.

OBJECTIVE 13 — **Complete Assignment Sheet 1.**

OBJECTIVE 14 — **Write terms of comparison used in judging a halter class of light horses.**

Optional Activities/
Resources in
Instructor's Guide

AREA	DESIRABLE	UNDESIRABLE
General	Typier (more breed type)	Off type
	Smoother	Rough
	Higher quality	Coarse; low quality
	More nicely balanced	Poorly balanced
	More stylish	Plain
	Heavier-muscled	Light-muscled
	Longer, cleaner muscling	Short, bunchy muscling
Head and neck	Shorter, broader head	Long, narrow head
	More alert eye	Sleep-eyed
	Neater muzzle	Coarse muzzle
	More massive jaw	Small jaw
	Shorter ear	Long, mule ear
	Cleaner at the throatlatch	Coarse-throated
	Smoother-necked	Coarse, thick neck
	Neck blends smoothly at shoulder	Rough at shoulder
	More breed character	Plain head
	Longer neck	Short neck
	More desirable set to neck	Low-headed; high-headed
Shoulder	More prominent withers	Low, flat withers
	Cleaner withers	Muttony (fat) withers
	More angle in the shoulder	Steep shoulder
	Deeper shoulder (longer)	Shallow shoulder (shorter)
	More sloping shoulder	Steep shoulder
	Smoother shoulder	Rough shoulder
Chest and forelegs	Deeper chest	Shallow chest
	Broader chest	Narrow chest
	Wider set forelegs	Narrow set forelegs
	Heavier forearm	Light forearm
	Longer, tapering forearm muscle	Short, bunchy forearm muscle
	Smoother knee joint	Coarse jointed
	Deeper-jointed	Shallow jointed
	Shorter cannon	Long cannon
	More medium length pastern	Long, weak pastern; short, stiff pastern
	More correct set of pastern	Weak pastern; steep pastern
Barrel and topline	Deeper in the heart	Shallow in the heart
	More spring in forerib	Flat-ribbed; flat-sided
	Shorter back	Long back
	Shorter, stronger coupling	Long-weak coupling
	Closer-coupled	Slack-couples
	Stronger back	Weak back
	Smoother hip	Rough hips; boxy hips
	Longer underline	Short underline

AREA	DESIRABLE	UNDESIRABLE
Quarter and rear legs	Heavy-quartered Longer croup Nicer turned croup From the side: Wider stifle Wider gaskin Deeper hock From the rear: Thicker, fuller quarter Thicker through stifle More gaskin inside and out Smoother-hocked	Light-quartered Short croup Steep croup; flat croup Narrow stifle Light gaskin Shallow hock Narrow quarter Light in the stifle Thin gaskin Coarse, rough hocks
Bone, feet, and legs; Stance	Heavier bone; stronger bone Flatter, cleaner cannons Shorter cannons More correct pasterns Cleaner joints Roomier, well-rounded feet Deeper, more open heel Smoother, harder hooves Straighter legs	Light bone Round cannons Long cannons Weak pasterns; steep pasterns Fleshy joints; puffy joints Mule-footed Shallow heel; narrow heel Thin, cracked hooves Crooked legs
Front legs	Straighter on front legs, stands more correctly on the forelegs Straighter on feet	Knock-kneed; bow-legged; buck-kneed; calf-kneed Pigeon-toed; splay footed
Hind legs	More correct on hind legs Straighter feet More correct set at the hock	Cow-hocked; bow-legged; bandy-legged Toes out; toes in Sickle-hocked (too much angle); post-legged (not enough angle)
Action	Truer action Moves straighter in front Moves straighter behind More correct hock action Freer moving Snappier stride Longer stride More forceful stride More correct flexion (hocks, knees, ankles)	Faulty action Paddles (wings out); moves close (rope walks) Wings out; wings in Rolls the hocks (lateral movement); jerks the hocks Stumbles; interferes; forges (hits front foot with back) Sluggish Short stride Halting stride Stiff (hock, knee, ankle); too much flexion (lifts feet too high)

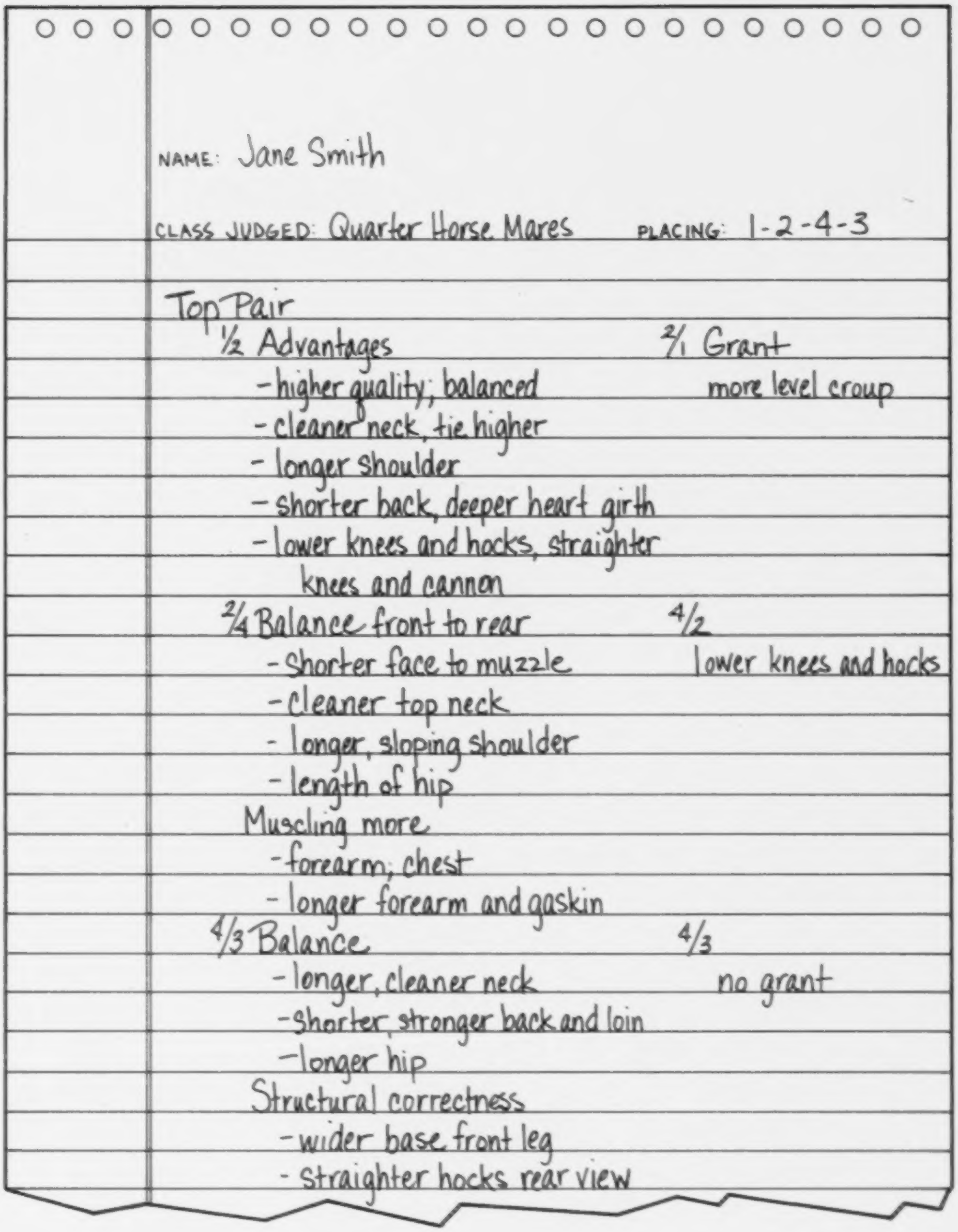
OBJECTIVE 15

Optional Activities/
Resources in
Instructor's Guide

State guidelines for taking notes for oral reasons for placings.

- Make notes identifying each horse in the class.
- Develop a chart with placing, reasons, grants, and faults.

FIGURE 42



NAME: Jane Smith

CLASS JUDGED: Quarter Horse Mares PLACING: 1-2-4-3

Top Pair	
1/2 Advantages	2/1 Grant
-higher quality; balanced	more level croup
-cleaner neck, tie higher	
-longer shoulder	
-shorter back, deeper heart girth	
-lower knees and hocks, straighter knees and cannon	
2/4 Balance front to rear	4/2
-shorter face to muzzle	lower knees and hocks
-cleaner top neck	
-longer, sloping shoulder	
-length of hip	
Muscling more	
-forearm; chest	
-longer forearm and gaskin	
4/3 Balance	4/3
-longer, cleaner neck	no grant
-shorter, stronger back and loin	
-longer hip	
Structural correctness	
-wider base front leg	
-straighter hocks rear view	

OBJECTIVE 16

Optional Activities/
Resources in
Instructor's Guide

Select from a list techniques for writing reasons for placings.

1. Start your reasons by saying, "I placed this class of (age), (breed), (sex)" and then give placings.

   EXAMPLE: "I placed this class of three-year-old quarter horse geldings 3 - 1 - 2 - 4."

2. Arrange class into three pairs: top, middle, and bottom.
3. Make reasons easily understood by official judge.
4. Compare horses rather than describe them.
5. Compare horses in logical sequence.

   ☑ **NOTE:** Place comments in an order from front to rear of animal or top to bottom.

6. Stress strong points of the top horse in each pair and then admit or grant any way the bottom horse in each pair may excel. Repeat same order for second and third pair.

☑ **NOTE:** The following set of written reasons was developed from the notes given in Figure 42.

AGED GELDINGS REASONS

I placed this class of aged geldings 1 - 2 - 4 - 3.

In my top pair, I placed 1 over 2 because 1 was higher quality and more nicely balanced with a cleaner neck tying in higher to a longer shoulder. Further, 1 was more level from withers to croup, had a shorter back in relation to underline and was longer in the croup. In addition, 1 was deeper in the heart girth and stood lower in the knees and hocks. One also was more structurally correct, being straighter in the knees and cannon as viewed from the front. I grant 2 was more level over the croup.

I placed 2 over 4 in my middle pair because 2 was more heavily muscled and more balanced front to rear than 4. Two was shorter in the face to muzzle, cleaner over the top of the neck, longer and more sloping in the shoulder and had more length of hip. Further, 2 was more powerfully muscled in the forearm and chest and had longer, lower tying muscling in the forearm and gaskin. I admit 4 stood lower in the knees and hocks as viewed from the side.

Moving to my bottom pair, I placed 4 over 3. Four was more balanced being longer and cleaner in the neck, shorter and stronger over the back and loin and longer in the hip. In addition, 4 stood wider at the base of the leg as viewed from the front and was straighter in the hocks as viewed from the rear. I criticized 3 for being long in the head, short in the neck, shallow in the shoulder, long in the back and short in the hip.

Written by: David W. Freeman
State Extension Equine Specialist
Oklahoma State University

OBJECTIVE 17

Optional Activities/ Resources in Instructor's Guide

Select from a list techniques for presenting oral reasons for placings.

- Stay within the allowable two minutes.
- Do not use notes while giving reasons for placings. Use only the placing card.
- Stand squarely on both feet.
- Stand approximately 4 to 8 feet from the reason-taker.
- Maintain eye contact with the reason-taker.

  ☑ **NOTE:** If you find it difficult to maintain eye contact, direct your eyes to the top of the listener's forehead.

- Speak clearly.
- Deliver reasons in a convincing, truthful, and easily understood manner.
- Keep reasons concise, using correct terminology and grammar.
- Emphasize big differences between horses, stressing the comparisons in which the top animal in each pair is superior.
- Upon conclusion, thank the reason-taker and leave.

OBJECTIVE 18	**Complete Assignment Sheet 2.**
OBJECTIVE 19	**Complete Assignment Sheet 3.**
OBJECTIVE 20	**Complete Assignment Sheet 4.**
OBJECTIVE 21	**Complete Assignment Sheet 5.**
OBJECTIVE 22	**Complete Assignment Sheet 6.**

ASSIGNMENT SHEET 1

LIGHT HORSE BREEDS AND SELECTION

D6

Name ______________________ Score __________

OBJECTIVE 13

Compute placing scores.

INTRODUCTION

Before contestants judge a class of horses, a group of officials judge the class and identify how the class should be placed. This is referred to as the official placing. There is a total of fifty possible points in a judging class. There are 24 possible placings on any given class. The officials determine cuts, or point variations, on each class. These are used to compute your score.

INSTRUCTIONS

Operation and Calculation
- Calculate with whole numbers

Math Application
- Solve word problems

Work the following problems.

1. Class 1, Yearling foals. Official Placings are 3 - 2 - 1 - 4 with cuts of 4, 4, 3. You placed the class 1 - 2 - 3 - 4. What is your placing score?

   Your score = ______________

2. Class 2, Aged stallions. Official placings are 1 - 3 - 2 - 4 with cuts of 3, 5, 3. You placed the class 1 - 3 - 4 - 2. What is your placing score?

   Your score = ______________

3. Class 3, Three-year-old geldings. Official placings are 4 - 2 - 1 - 3 with cuts of 5, 5, 5. You placed the class 1 - 3 - 4 - 2. What is your placing score?

Your score = ____________________

ASSIGNMENT SHEET 2

LIGHT HORSE BREEDS AND SELECTION

D6

Name ______________________ Score __________

OBJECTIVE 18 **Evaluate two horses for comparable advantages.**

INSTRUCTIONS Study the following photographs for the strengths and weaknesses of each horse. List desirable and undesirable traits.

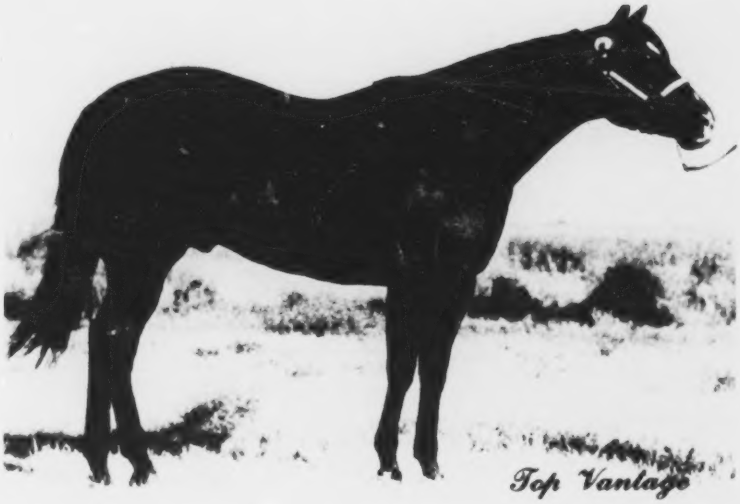
Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Cognitive Activities
- Analyze/synthesize information
- Draw conclusions
- Predict results/outcomes

1.

FIGURE 1

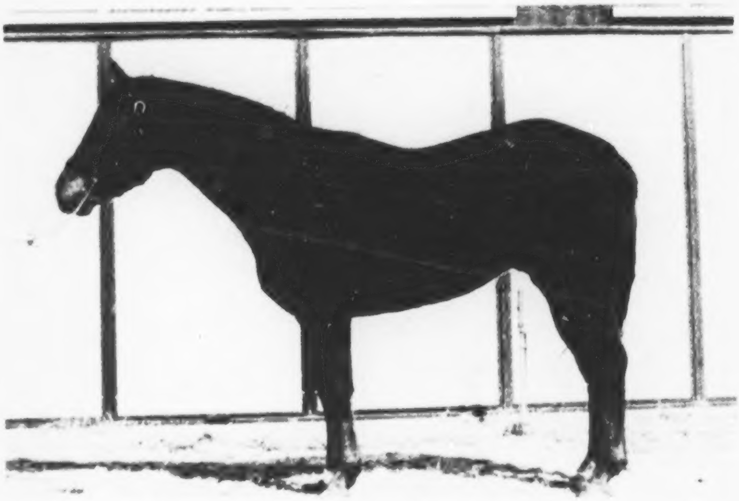


Courtesy: Oklahoma State University, Stillwater, Oklahoma.

Advantages	Disadvantages

2.

FIGURE 2



Courtesy: Oklahoma State University, Stillwater, Oklahoma.

Advantages	Disadvantages
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________

ASSIGNMENT SHEET 3

LIGHT HORSE BREEDS AND SELECTION D6

Name ______________________ Score __________

OBJECTIVE 19 **Judge a halter class of light horses.**

INSTRUCTIONS The instructor or a junior or senior agricultural education student has already placed the officials on a breeding class of horses. You must now judge the class. Write your placings and take notes on the class.

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Research
- Take notes

General Relating
- Participate in group activities

Cognitive Activities
- Collect/record information
- Draw conclusions
- Predict results/outcomes

Class name ______________________ Placings __________

Take notes on the class.

1. ____

____

____

____

____

2. ____

____

____

____

____

3. ____

____

____

____

____

4. ____

____

____

____

____

ASSIGNMENT SHEET 4

LIGHT HORSE BREEDS AND SELECTION D6

Name ______________________ Score __________

OBJECTIVE 20

Write a set of reasons for placing a class of light horses.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 3

INSTRUCTIONS

Using the notes you took on a previous Assignment Sheet, write your reasons for each class. After writing the reasons, go back through them. Determine if the reasons are convincing, whether the reasons separate the animals from each other, and whether you used appropriate judging terms.

Class name ______________________ Placings ________

Reading Comprehension
- Gain factual information
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- State ideas clearly
- Use standard grammar, spelling, and capitalization

Composition
- Proofread and edit

Cognitive Activities
- Collect/record information
- Draw conclusions

ASSIGNMENT SHEET 5

LIGHT HORSE BREEDS AND SELECTION D6

Name ______________________ Score __________

OBJECTIVE 21

Give a set of oral reasons for placing a class of light horses.

INTRODUCTION

Giving reasons orally takes a lot of practice. Your reasons should describe to the reason-taker just how you placed the class. In order to obtain a good score, you must convince the reason-taker that your placings are correct.

EQUIPMENT AND SUPPLIES

- Assignment Sheet 4

INSTRUCTIONS

Using the previously written set of reasons, be prepared to give the reasons orally. Read over your reasons several times. Do not attempt to memorize the reasons, just remember the good points of each animal and the grants. You should have a good opening statement. Stand in front of a mirror and practice your reasons several times.

1. For which class are you giving the reasons? ______________
2. How did you place the class? ______________________
3. What is your opening statement? ______________________

   ____
4. Have you studied the reasons, and can you present them without using any of your notes?

   ____
5. What is your closing statement? ______________________

   ____

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions

Oral Presentation
- Use good speaking techniques
- Select/use words effectively
- Present appropriate appearance

Interactive Communications
- Give/follow oral directions
- Communicate with professional colleagues/associates

ASSIGNMENT SHEET 6 — LIGHT HORSE BREEDS AND SELECTION — D6

Name ______________________________ Score __________

OBJECTIVE 22

Use resource material to locate information related to the breed association, origin, color, and characteristics of a light horse breed.

INTRODUCTION

Individuals may select one breed of animal over another for many reasons. The bottom line for most breed selection is personal preference.

EQUIPMENT AND SUPPLIES

- Information received from breed associations
- Breed magazines and journals
- Other reference materials and books about horse breeds

INSTRUCTIONS

Answer the following questions about the breed you have selected for your research.

1. Breed ______________________________
2. Where did the breed originate? ______________________________
3. What color is the breed? ______________________________
4. What is the breed primarily used for? ______________________________

   ____

   ____

   ____
5. Where is the breed's headquarters located? ______________________________

   ____
6. What is the average size of the breed?

   Height ______________ Weight ______________

Reading Comprehension
- Gain factual information
- Draw conclusions
- React to written material

Research and Reference
- Select useful resources
- Find materials in library
- Use standard references
- Use in-book reference tools
- Use magazines and newspapers

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Composition
- Use complete sentences

Research
- Take notes
- Outline material

Cognitive Activities

- Collect/record information
- Draw conclusions

7. Does the breed association publish a newsletter or journal? If yes, what is the name?

____

____

____

8. How many animals are recorded in the association?

____

9. What is the Jockey Club? ________________________

____

____

____

____

OBJECTIVE SHEET

LIVESTOCK FEEDING

D7

INTRODUCTION

Domestic farm animals are usually completely dependent upon humans for their nutritive needs. Your decisions regarding the proper mixes of rations for an animal can directly affect your profitability and the health of the animal. You must make careful decisions regarding the purchase of prepared feeds, and the best feed values.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS	
PREREADING:	Go to your classroom library or your school library and find a magazine that deals with agriculture or livestock. Find an article that deals with nutrition and feeding of livestock and read it.
WRITING:	Write a one-page essay on how the information in the news article might affect your livestock operation.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Match nutrients to their correct basic functions.
2. List quantities in which feeds may be purchased.
3. Select from a list factors to consider when purchasing feed.
4. List commercial feed tag requirements.
5. State rules for calculating price per pound of protein in feed.
6. Match types of performance rations to their correct definitions.
7. Match swine feeding situations to their correct thumb rules.
8. Match sheep feeding situations to their correct thumb rules.
9. Match beef feeding situations to their correct thumb rules.
10. Match dairy cattle feeding situations to their correct thumb rules.
11. Match light horse feeding situations to their correct thumb rules.
12. Arrange in order the steps to balancing a ration, using the Pearson Square Method.
13. Survey livestock feeding information in the community. (Assignment Sheet 1)
14. Calculate the price per pound of protein in feed. (Assignment Sheet 2)
15. Use thumb rules to determine feed for various livestock. (Assignment Sheet 3)
16. Balance rations using the Pearson Square Method. (Assignment Sheet 4)

INFORMATION SHEET | LIVESTOCK FEEDING | D7

OBJECTIVE 1

Optional Activities/
Resources in
Instructor's Guide

Match nutrients to their correct basic functions.

WORDS YOU SHOULD KNOW	
concentrate	feed high in TDN and low in fiber
feed additive	general term for any component added to a ration for a specific purpose
fiber	tough part of feed that is not very digestible
nutrient	class of food that aids in support of life; becomes a part of the body cells EXAMPLES: Vitamins, minerals, protein, fats, carbohydrates, water
roughage	feed low in TDN and high in fiber
total digestible nutrients (TDN)	percentage of all digestible matter, except minerals, in a feed

☑ **NOTE:** All nutrients are important to the animal because each nutrient has a specific function in the animal's body. Problems may occur when there is a deficiency of any one nutrient.

- water
  - ☐ dissolves and carries other nutrients through body
  - ☐ regulates body temperature
  - ☐ initiates necessary chemical reactions in the body

    ☑ **NOTE:** The amount of water in an animal's body may range from 40 to 80 percent.

- protein
    - supplies material to build body tissues, hooves, horns, hair, and skin
    - essential for fetal development in pregnant animals
- carbohydrates
    - produce body heat to help keep the animal warm
    - provide energy for muscle movement

      EXAMPLE: heartbeat, walking, breathing, digestive contractions
    - produce fat
- fats
    - provide energy and body heat
    - carry fat-soluble vitamins that are in feed
- minerals
    - provide material for growth of bones, teeth, and tissue
    - regulate many of body's vital chemical processes
    - aid in muscular activities, reproduction, digestion, and tissue repair
- vitamins
    - help in tooth and bone formation
    - help prevent infections
    - aid body's chemical reactions
    - necessary for many special body functions

OBJECTIVE 2

Optional Activities/
Resources in
Instructor's Guide

List quantities in which feeds may be purchased.

- bulk

  ☑ **NOTE:** Feed sold in bulk quantities is usually measured by the ton. It is bagged for the purchaser to haul, or delivered to the purchaser and augured into a storage facility. The bags may be returned for a deposit if kept in good condition. Price per hundredweight is usually discounted on bulk orders.

- fifty pound paper sacks

  ☑ **NOTE:** The price per hundredweight is usually discounted on larger quantities purchased.

OBJECTIVE 3

Select from a list factors to consider when purchasing feed.

WORDS YOU SHOULD KNOW	
creed feed	additional feed for young animals that supplements nutrients provided by mother's milk or other sources
medicated feed	any type of ration to which medicine or antibiotics have been added as a disease preventative
palatable	of a desirable taste

- type of livestock being fed

  EXAMPLE: A sheep ration should not be fed to swine.

- protein level

  ☑ **NOTE:** Protein level is usually the most important consideration in purchasing feed. Protein level also greatly affects the price of the feed.

- performance expected from livestock

  EXAMPLES: Maintenance, growth, fattening, production, reproduction, work

- quantity

  ☑ **NOTE:** Purchase only enough feed for a two- to three-week period. Old feed becomes stale and less palatable.

- condition and size of storage facilities

  ☑ **NOTE:** Storage facilities should be adequate to hold quantity of feed purchased, and should not allow access of rats, mice, or birds.

- price in relation to feeding value

  ☑ **NOTE:** Often the lowest priced feed does not provide the best value because the quality may be poor.

  EXAMPLE: Lower priced cattle cubes may be priced lower because they are low in protein and high in fiber content.

OBJECTIVE 4

Required Activities/
Resources
– Transparency Master

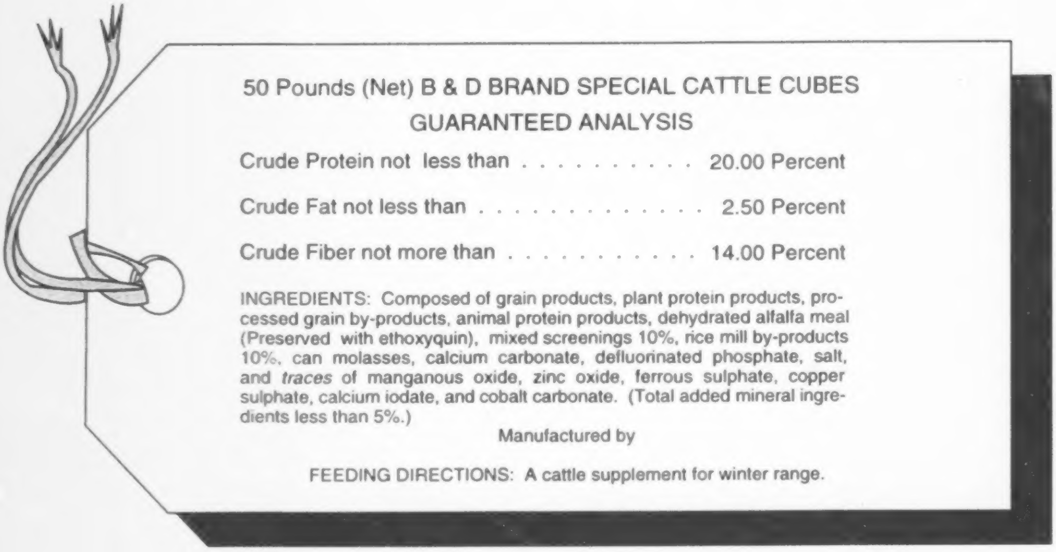
List commercial feed tag requirements.

You will see a transparency showing a commercial feed tag.

- minimum crude protein percentage
- minimum crude fat percentage
- maximum crude fiber percentage

☑ **NOTE:** It is important to select the proper feed for a particular feeding situation. In most cases, purchasing a commercially balanced ration is the best approach to meet the animal's needs. Protein level, usually the item of greatest concern, can be determined by reading the feed tag. The law requires feed tabs to list the guaranteed analysis of the feed in terms of protein, fat, and fiber percentages.

FIGURE 1



50 Pounds (Net) B & D BRAND SPECIAL CATTLE CUBES

GUARANTEED ANALYSIS

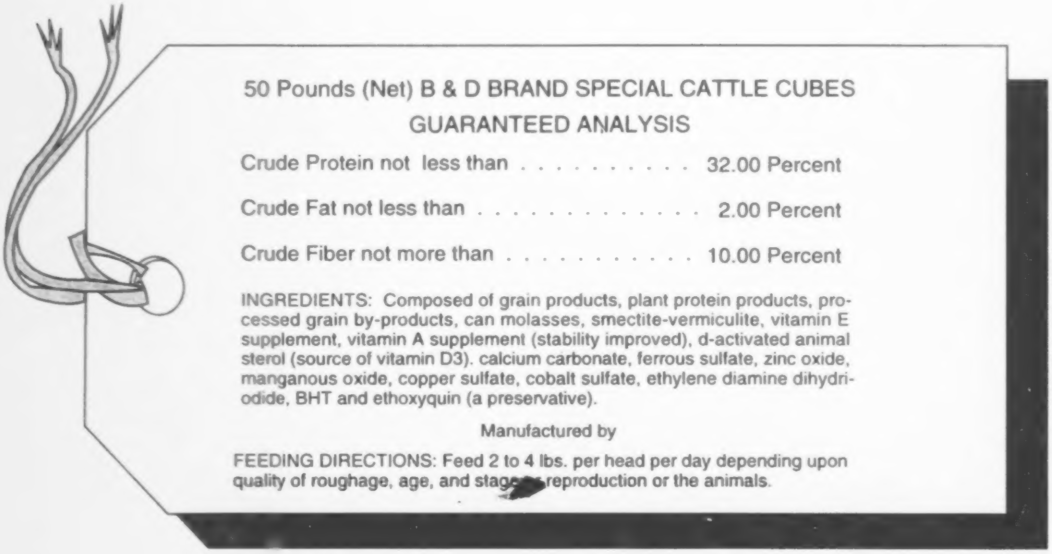
Crude Protein not less than	20.00 Percent
Crude Fat not less than	2.50 Percent
Crude Fiber not more than	14.00 Percent

INGREDIENTS: Composed of grain products, plant protein products, processed grain by-products, animal protein products, dehydrated alfalfa meal (Preserved with ethoxyquin), mixed screenings 10%, rice mill by-products 10%, can molasses, calcium carbonate, defluorinated phosphate, salt, and *traces* of manganous oxide, zinc oxide, ferrous sulphate, copper sulphate, calcium iodate, and cobalt carbonate. (Total added mineral ingredients less than 5%.)

Manufactured by

FEEDING DIRECTIONS: A cattle supplement for winter range.

FIGURE 2



50 Pounds (Net) B & D BRAND SPECIAL CATTLE CUBES

GUARANTEED ANALYSIS

Crude Protein not less than	32.00 Percent
Crude Fat not less than	2.00 Percent
Crude Fiber not more than	10.00 Percent

INGREDIENTS: Composed of grain products, plant protein products, processed grain by-products, can molasses, smectite-vermiculite, vitamin E supplement, vitamin A supplement (stability improved), d-activated animal sterol (source of vitamin D3). calcium carbonate, ferrous sulfate, zinc oxide, manganous oxide, copper sulfate, cobalt sulfate, ethylene diamine dihydriodide, BHT and ethoxyquin (a preservative).

Manufactured by

FEEDING DIRECTIONS: Feed 2 to 4 lbs. per head per day depending upon quality of roughage, age, and stag[illegible] reproduction or the animals.

BEST COPY AVAILABLE

OBJECTIVE 5

Optional Activities/ Resources in Instructor's Guide

State rules for calculating price per pound of protein in feed.

☑ **NOTE:** While a particular feed may be priced less per pound than another feed, it may actually be more expensive than the other feed when the price per pound of protein it provides is calculated.

1. Calculate the actual pounds of protein by multiplying the total pounds of feed by the percent of total protein.

   EXAMPLE: You are considering paying $5 for 50 pounds of cattle cubes that contain 20 percent protein.

   Pounds of protein = Total pounds feed X percent total protein

   = 50 X 0.20

   = 10

2. Find the price per pound of protein by dividing total cost of the feed by the total pounds of protein.

   EXAMPLE:

   $$\text{Price per pound of protein} = \frac{\text{Total cost of feed}}{\text{Total pounds of protein}}$$

   $$= \frac{\$5.00}{10}$$

   $$= \$.50$$

OBJECTIVE 6

Optional Activities/
Resources in
Instructor's Guide

Match types of performance rations to their correct definitions.

WORDS YOU SHOULD KNOW	
balanced ration	ration that supplies all the necessary nutrients in proper amounts
commercial ration	prepared feed, usually a balanced ration, that can be purchased for specific feeding purposes such as maintenance, growth, fattening, production, reproduction, or work
ration	feed allowed an animal for a twenty-four hour period

- maintenance ration – ration that supplies only those nutrients needed to maintain an animal's normal body functions

  ☑ **NOTE:** This type of ration is intended to maintain normal body weight. It does not allow for nutrients needed for growing, fattening, production, reproduction, or work.

- growing ration – ration that supplies nutrients above maintenance level; allows an animal to build and expand body parts

  ☑ **NOTE:** Animals must have additional nutrients beyond the maintenance level in order for the body to grow and mature. Growing ration is usually fed to physically immature animals.

- fattening ration – ration that supplies nutrients used by animals to produce fat after maintenance and growing requirements are met

  ☑ **NOTE:** Animals intended for slaughter need certain amounts of fat deposits in their meat to make the meat more desirable. Feeds high in carbohydrates and fats are used for fattening.

- production ration – ration that supplies nutrients used by animals to produce items such as milk, eggs, or wool

- reproduction ration – ration that supplies additional nutrients needed by an animal during breeding activities and pregnancy

- work ration – ration that supplies additional nutrients needed by working animals

  EXAMPLES: Horses need a work ration because they work when they are ridden.

OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

Match swine feeding situations to their correct thumb rules.

WORDS YOU SHOULD KNOW	
flushing	feeding practice used just prior to breeding a female animal; improves animal's condition

☑ **NOTE:** There are a number of generally accepted rules for feeding swine. The following rules are based on a per day amount and should serve as general guidelines.

- sows and gilts, flushing two to three weeks prior to breeding – 6 to 8 pounds of 14 percent protein ration
- bred sows and gilts – 4 to 6 pounds of 14 percent protein ration
- sows nursing litters – 10 to 15 pounds of 14 to 15 percent protein ration
- nursing pigs from two weeks old to weaning – free choice of 16 to 18 percent creep ration
- pigs from 50 pounds to 100 pounds – 6 percent of body weight of 16 percent protein ration
- pigs from 100 pounds to 170 pounds – 5 percent of body weight of 14 percent protein ration
- pigs from 170 pounds to 220 pounds market weight – 4 percent of body weight of 13 percent protein ration
- boars on maintenance – 4 to 6 pounds of 14 percent protein ration
- boars during breeding season – 6 to 8 pounds of 14 percent protein ration

OBJECTIVE 8

Match sheep feeding situations to their correct thumb rules.

WORDS YOU SHOULD KNOW	
gestation	period of pregnancy

☑ **NOTE:** There are a number of generally accepted rules for feeding sheep. The following rules are based on per day amounts and should serve as general guidelines. The rules concerning ewes are based on ewes weighing 130 to 150 pounds, and rules concerning rams are based on rams weighing 175 to 225 pounds.

- ewes on maintenance – 3 pounds of alfalfa/grass mixed hay
- ewes, flushing two to three weeks prior to breeding – 3 pounds of alfalfa/grass mixed hay, plus ½ to ¾ pound of 12 percent protein ration
- ewes during first fifteen weeks of gestation – 3.5 pounds of alfalfa/grass mixed hay
- ewes during last six weeks of gestation – 4 pounds of alfalfa/grass mixed hay, plus ½ pound of 12 percent protein ration
- ewes during first eight weeks of lactation – 4.5 pounds of alfalfa/grass mixed hay, plus 2 pounds of 12 percent protein ration
- lambs from birth to eight weeks – free choice of 15 percent protein ration
- lambs from eight weeks to 75 pounds – free choice of 16 to 18 percent protein ration
- lambs from 75 pounds to 120 pound market weight – 3 to 4 pounds of 13 to 15 percent protein ration

  ☑ **NOTE:** This thumb rule is based on lambs being hand fed on a regular schedule twice a day.

- rams on maintenance – 5 pounds of alfalfa/grass mixed hay
- rams during breeding season – 5 pounds of alfalfa/grass mixed hay, plus 2 pounds of 12 percent protein ration

OBJECTIVE 9

Match beef feeding situations to their correct thumb rules.

WORDS YOU SHOULD KNOW	
protein supplement	high-protein additive that is sometimes used to increase a ration's protein level EXAMPLES: Soybean meal, cottonseed meal, linseed meal, tankage and meat scraps, fish meats

☑ **NOTE:** As a general rule, sufficient good quality pasture grasses are all that is needed for cows (with or without calves), weaned and growing steers and heifers, and bulls. Winter feeding and finishing feeding require special feeding considerations. Free choice vitamin, mineral, and salt mix should be available on a year round basis. Thumb rules concerning cows are based on a 900 to 1000 pound cow and per-day amounts.

- dry, pregnant cows and bred heifers during winter feeding when grazing is not possible – 20 pounds of alfalfa/grass mixed hay
- dry, pregnant cows and bred heifers during winter feeding when dry grass grazing is possible – 2 pounds of 30 to 40 percent protein supplement

  ☑ **NOTE:** The protein supplement is usually in the form of cattle cubes. As protein level of cubes goes down, the quality fed should go up.

  EXAMPLE: Feed 2 pounds of 40 percent cubes or 4 pounds of 20 percent cubes.

- cows nursing calves during winter feeding when gazing is not possible – 30 pounds of alfalfa/grass mixed hay
- cows nursing calves during winter feeding when dry grass grazing is possible – 3 pounds of 30 to 40 percent protein supplement

  ☑ **NOTE:** The protein supplement is usually in the form of cattle cubes. As protein level of cubes goes down, the quality fed should go up.

- steers and heifers from weaning to finish
    - ☐ first two days on feed – free choice of high quality grass hay
    - ☐ third day to finish – add 2 pounds of concentrate ration. Gradually increase concentrate and decrease high quality grass hay until concentrate is leveled off at 2.5 percent of body weight, and grass hay is leveled off at 2 to 4 pounds

      ☑ **NOTE:** Amounts of concentrate should be what the steer will clean up in 30 to 45 minutes twice daily. For example, a 600 pound steer should eat about 15 pounds of concentrates daily, 7.5 pounds in the morning and 7.5 pounds at night.

      EXAMPLE:

      600 pound steer
      600 pounds X 0.025 = 15 pounds of concentrate

- young bulls from weaning to fifteen months – 2.5 percent of their body weight of 50 percent concentrate and 50 percent roughage
- mature bulls during winter feeding – free choice of alfalfa hay, plus 4 pounds of ground or rolled grain and 1 pound of 32 percent protein supplement in the form of cattle cubes

OBJECTIVE 10

Match dairy cattle feeding situations to their correct thumb rules.

☑ **NOTE:** There are a number of generally accepted rules for feeding dairy cattle. The following rules are based on per day amounts and should serve as general guidelines. Exceptionally productive cows may need more feed than that listed.

- cows in production, not on pasture – free choice of good quality roughage, plus 1 pound of 14 to 16 percent protein concentrate for each 4 pounds of milk produced each day

  EXAMPLE: Concentrate requirement for cow producing 50 pounds of milk per day

  50 pounds of milk ÷ 4 = 12.5 pounds of concentrate

- cows in production, on pasture – 1 pound of 14 to 16 percent protein concentrate for each 3 pounds of milk produced over 30 pounds

  EXAMPLE: concentrate requirement for cow producing 50 pounds of milk per day

  50 - 30 = 20 pounds produced over 30

  20 ÷ 3 = 6.6 pounds of 14 to 16 percent concentrate

- dry cows – good pasture or free choice of high quality alfalfa hay, plus 10 pounds of 10 percent protein in grain mixture

- mature bulls, and bull calves four months old and over – 1 pound of hay and ½ pound of concentrate per 100 pounds of body weight

  ☑ **NOTE:** Do not feed rations for lactating cows to mature bulls. The additional calcium causes bones to fuse.

- heifers on pasture, four months old and older – ½ pound of grain concentrate per 100 pounds of body weight, not to exceed 4 to 6 pounds

  ☑ **NOTE:** Any of the common grains or grain mixtures used for dairy cattle feeding are sufficient.

- heifers in drylot, four months old and older – free choice of high quality alfalfa hay, plus 1 percent of body weight in grain concentrate

- calves from birth to four months

  - first five days – mother's milk
  - next three weeks – 1 pound whole milk for each 10 pounds of body weight
  - ten days old – begin dry calf starter ration
  - seven weeks old – discontinue milk and feed 5 pounds of calf starter
  - seven weeks to four months – free choice of good quality alfalfa hay, plus 2 to 4 pounds of concentrate mix

OBJECTIVE 11

Match light horse feeding situations to their correct thumb rules.

☑ **NOTE:** Horses are fed according to their size, stage of growth, condition, and the amount of work they perform. Salt should be fed free choice. Grain for horses usually is considered to be good quality oats, while hay may be good quality grass hay. If alfalfa hay is fed, it should be limited to approximately half of the roughage. The following rules are based on per day amounts and should serve as general guidelines.

- idle mature horses – 1.5 to 2 pounds of roughage per 100 pounds of body weight

- mature horses performing one to three hours of light work per day – 1.25 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.5 to 0.75 pounds of grain per 100 pounds of body weight

  EXAMPLES:

  Daily roughage for a 1,000-pound horse

  $$\text{Roughage} = \frac{\text{body weight}}{100} \text{ X } 1.5 \text{ pounds roughage}$$

  $$= \frac{1000}{100} \text{ X } 1.5$$

  $$= 10 \text{ X } 1.5$$

  $$= 15 \text{ pounds}$$

  Daily grain for a 1,000-pound horse

  $$\text{Grain} = \frac{\text{body weight}}{100} \text{ X } .75 \text{ pounds roughage}$$

  $$= \frac{1000}{100} \text{ X } .75$$

  $$= 10 \text{ X } .75$$

  $$= 7.5 \text{ pounds}$$

- pregnant mares – 1 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.5 to 1.5 pounds of grain per 100 pounds of body weight

- idle mares nursing foals – 1.5 pounds of roughage per 100 pounds of body weight, plus 0.33 pounds of grain per 100 pounds of body weight

- foals before weaning – 0.5 to 0.75 pounds of roughage per 100 pounds of body weight, plus 0.5 to 0.75 pounds of grain per 100 pounds of body weight

- growing colts after weaning – 1.5 to 2 pounds of roughage per 100 pounds of body weight, plus 1 to 1.5 pounds of grain per 100 pounds of body weight

- stallions during breeding season – 1 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.75 to 1.5 pounds of grain per 100 pounds of body weight

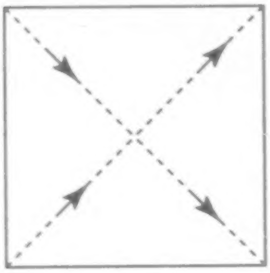
OBJECTIVE 12

Arrange in order the steps to balancing a ration, using the Pearson Square Method.

☑ **NOTE:** To balance a ration, combine a grain and protein supplement in proportion to the desired level of protein. The following method shows how. For this method to work, the desired level of protein must be a number between the protein levels of the two feeds being used; if it is not, select a different feed combination.

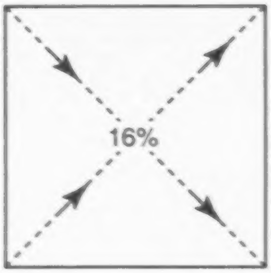
1. Draw a square with dotted lines connecting the opposite corners, and arrows on the dotted lines pointing to the right corners.

FIGURE 3



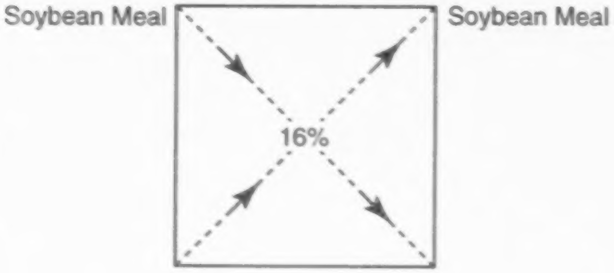
2. Write the desired protein level inside the square.

FIGURE 4



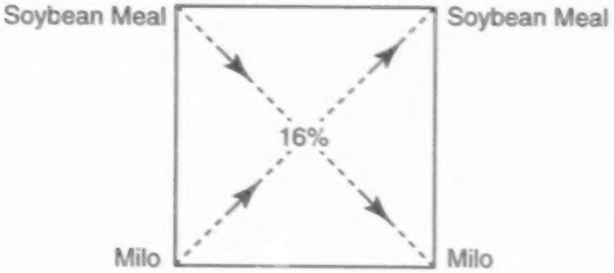
3. Write one type of feed outside each top corner.

FIGURE 5


Soybean Meal
Soybean Meal
16%

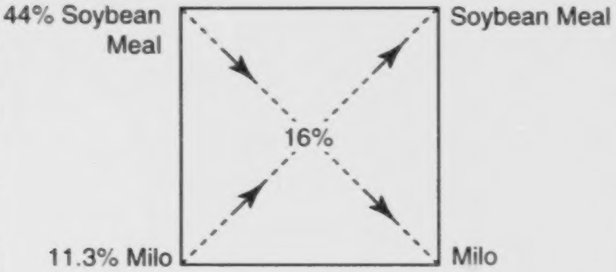
4. Write the other type of feed outside each bottom corner.

FIGURE 6


Soybean Meal
Soybean Meal
16%
Milo
Milo

5. Write the percentage of protein in each feed beside the two left corners.

FIGURE 7


44% Soybean Meal
Soybean Meal
16%
11.3% Milo
Milo

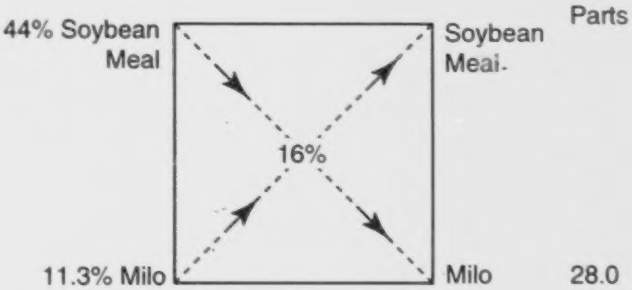
6. Using the numbers from the desired protein level inside the square and the percentage of protein from the top left corner, subtract the smaller number from the larger number.

   EXAMPLE: 44 - 16 = 28

7. Place the result of step 6 beside the bottom right corner, following the dotted line from the top left to the bottom right corner.

   ☑ **NOTE:** This number is how many parts of the feed in the bottom corner are needed to balance the ration. The higher the protein level of the feed used, the fewer parts of the feed will be needed to balance the ration.

FIGURE 8

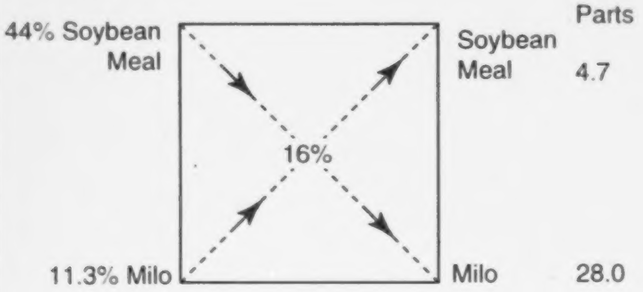

44% Soybean Meal
Soybean Meal
Parts
16%
11.3% Milo
Milo
28.0

8. Repeat step 6 using the numbers from the desired protein level and percentage of protein in the bottom left corner

   EXAMPLE: 16 - 11.3 = 4.7

9. Place the result beside the top right corner, following the dotted line from the bottom left to the top right corner.

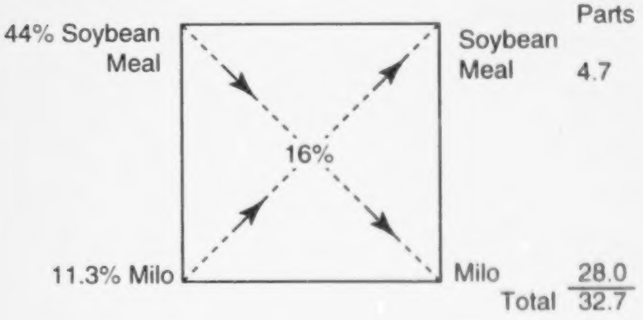
FIGURE 9



44% Soybean Meal
Parts
Soybean Meal
4.7
16%
11.3% Milo
Milo
28.0

10. Add the two numbers in the right corners to get the total parts of feed needed.

FIGURE 10

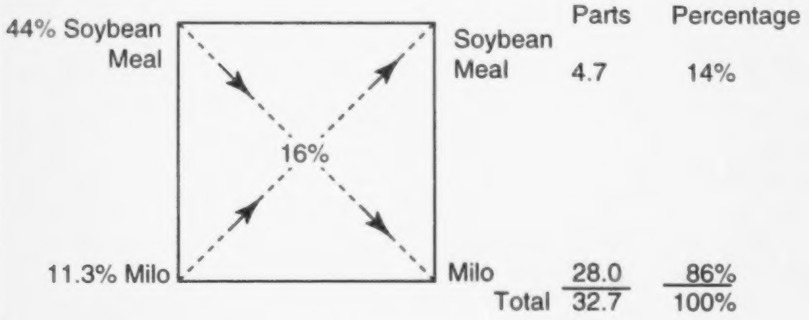


44% Soybean Meal
Parts
Soybean Meal
4.7
16%
11.3% Milo
Milo
28.0
Total
32.7

11. Determine the percentage of each feed needed by dividing the number of parts of each feed by the total parts.

EXAMPLE: 4.7 ÷ 32.7 = 0.14 (14% soybean meal)
28 ÷ 32.7 = 0.86 (86% milo)

FIGURE 11



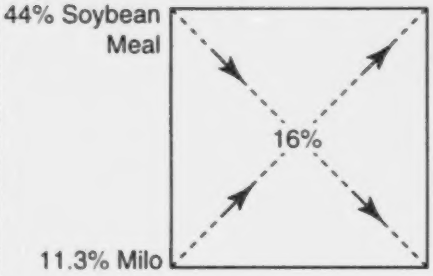
44% Soybean Meal
Parts
Percentage
Soybean Meal
4.7
14%
16%
11.3% Milo
Milo
28.0
86%
Total
32.7
100%

12. Determine the number of pounds of each feed needed to provide desired amount of balanced ration by multiplying the percentage of each feed times the total amount of ration desired.

EXAMPLE: 0.14 x 2000 = 280
14 percent of 2000 pounds of feed is 280 pounds of soybean meal.

0.86 x 2000 = 1720
86 percent of 2000 pounds of feed is 1720 pounds of milo.

FIGURE 12



	Parts	Percentage	#/Ton
Soybean Meal	4.7	14%	280#
Milo	28.0	86%	1720#
Total	32.7	100%	2000#

OBJECTIVE 13 **Complete Assignment Sheet 1.**

OBJECTIVE 14 **Complete Assignment Sheet 2.**

OBJECTIVE 15 **Complete Assignment Sheet 3.**

OBJECTIVE 16 **Complete Assignment Sheet 4.**

ASSIGNMENT SHEET 1

LIVESTOCK FEEDING

D7

Name ______________________ Score __________

OBJECTIVE 13

Survey livestock feeding information in the community.

INSTRUCTIONS

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization

Listening
- Apply active listening skills
- Apply questioning techniques

Obtain the following feed information by interviewing a person in your community who is involved in the feed industry or in animal nutrition.

Identify five concentrates available in your area as livestock feed.

Identify the five most commonly used roughages in your area.

Identify and describe two occupations in your community that are related to the feed industry and animal nutrition.

Occupational title ______________________________

Description ______________________________

____

____

____

____

____

Occupational title ______________________________

Description ______________________________

____

____

____

____

____

ASSIGNMENT SHEET 2

LIVESTOCK FEEDING

D7

Name ______________________________ Score ____________

OBJECTIVE 14

Calculate the price per pound of protein in feed.

INTRODUCTION

Often, price alone is not the only factor to consider in purchasing feed. Because protein levels of feed and actual protein intake by the animal are major considerations, it is very important to calculate the price per pound of protein in feed to determine the best value.

INSTRUCTIONS

Calculate the actual pounds of protein and price per pound of protein in these problems. Show your work.

You are considering paying $210 for 1 ton of cattle cubes containing 38 percent protein. How many actual pounds of protein will you receive? How much will you pay per pound of protein?

1. Pounds of protein ______________________________
2. Price per pound of protein ______________________________

Functional Reading
- Follow written instructions

Operation and Calculation
- Calculate with whole numbers
- Calculate with decimals

Math Application
- Solve word problems

Functional Math
- Use calculator for computation

You are considering buying 1 ton of bulk grain, either barley or oats, to mix your own ration. Your main concern is the price per pound of protein. Barley costs $120 per ton and contains 11 percent protein. Oats cost $154 per ton and contain 12 percent protein. Which grain will be the best buy?

3. Actual pounds of protein in 1 ton of barley ______________

4. Actual pounds of protein in 1 ton of oats ______________

5. Price per pound of protein for barley ______________

6. Price per pound of protein for oats ______________

7. Which grain is the best value to meet your needs? ________

____

ASSIGNMENT SHEET 3

LIVESTOCK FEEDING

D7

Name ______________________ Score __________

OBJECTIVE 15

Use thumb rules to determine feed for various livestock.

INSTRUCTIONS

Use the rules of thumb to solve the following feeding problems. Give special attention to those situations that might apply to your own livestock feeding circumstances.

Functional Reading
- Follow written instructions

Operation and Calculation
- Calculate with whole numbers
- Calculate with decimals

Math Application
- Solve word problems

Functional Math
- Use calculator for computation

Feeding bred gilt weighing approximately 250 pounds

1. Type of ration (protein level) ______________________

2. Daily feed amount (pounds) ______________________

Hand feeding five pigs to be sold as market hogs with an average weight of 180 pounds

3. Daily feed amount (pounds) ______________________

Hand feeding three pigs with an average weight of 65 pounds

4. Daily feed amount (pounds) ______________________

Feeding a 140 pound mature ewe, two and one-half weeks prior to breeding

5. Daily amount of roughage (pounds) ______________________

6. Type of roughage ______________________

7. Daily amount of concentrate (pounds) ______________________

8. Type of concentrate (protein level) ______________________

Feeding 70 pound lamb

9. Type of feed (protein level) ______________________

10. Daily amount of feed (pounds) ______________________

Maintaining five ewes, with an average weight of 135 pounds each, through the summer in a drylot

11. Type of ration ____________________

12. Daily feed amount (pounds) ____________________

Winter feeding ten bred heifers during heavy ice and snow coverage

13. Type of ration ____________________

14. Daily amount of ration (pounds) ____________________

Feeding two steers that will be kept in a drylot, with an average weight of 900 pounds each, for slaughter

15. Daily amount of concentrate (pounds) ____________________

16. Daily amount of roughage (pounds) ____________________

17. If concentrate costs $9.60 per 100 pounds, what would it cost to feed concentrate to the two steers for thirty days?

    ____

Winter feeding a mature bull (beef) in drylot

18. Type of roughage ____________________

19. Daily amount of roughage (pounds) ____________________

20. Type of concentrate ____________________

21. Daily amount of concentrate (pounds) ____________________

22. Amount and type of protein supplement ____________________

Feeding a 1300 pound dairy cow producing 60 pounds of milk per day which will be kept in a drylot

23. Daily amount of roughage (pounds) ____________________

24. Type of concentrate ____________________

25. Daily amount of concentrate (pounds) ____________________

Feeding a dairy heifer, weighing approximately 700 pounds which will be kept in a drylot

26. Daily amount of roughage (pounds) ____________________

27. Type of roughage ____________________

28. Daily amount of grain concentrate (pounds) ____________________

Feeding a 900 pound gelding, ridden for one hour per day for pleasure and will be kept in a drylot

29. Maximum daily amount of roughage (pounds) ____________________

30. Maximum daily amount of grain (pounds) ____________________

Feeding a 1200 pound idle mare nursing a foal

31. Daily amount of roughage (pounds) ____________________

32. Daily amount of grain (pounds) ____________________

ASSIGNMENT SHEET 4

LIVESTOCK FEEDING

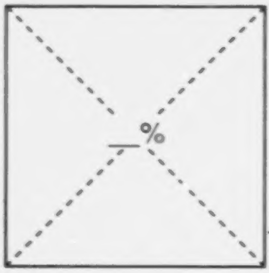
D7

Name ______________________________ Score __________

OBJECTIVE 16 **Balance rations using the Pearson Square Method.**

INSTRUCTIONS

1. 16 percent ration using corn with 6.6 percent protein, and soybean meal with 41 percent protein. Give the pounds of each for a ton of ration.



	Parts	Percentage	#/Ton
Total	____	____	__________

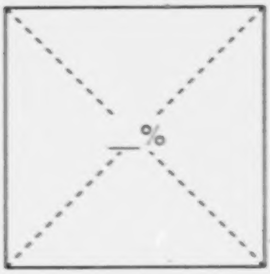
Functional Reading
- Follow written instructions

Operation and Calculation
- Calculate with whole numbers
- Calculate with decimals

Math Application
- Solve word problems

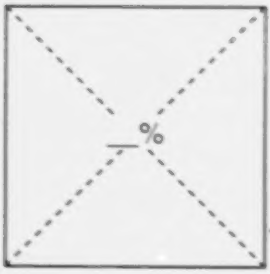
Functional Math
- Use calculator for computation

2. 14 percent ration using barley with 11 percent protein and a prepared supplement with 36 percent protein. Mix 1 ton of ration.



	Parts	Percentage	#/Ton
Total	____	____	________

3. 16 percent ration using equal parts of corn (6.6 percent protein) and milo (8.8 percent protein) and equal parts of soybean meal (44 percent protein) and meat and bone scraps (55 percent protein). Mix a ton of ration.



	Parts		Percentage	#/Ton
Total	____	____	____	________

OBJECTIVE SHEET — INTRODUCTION TO PLANT SCIENCE — E1

INTRODUCTION

Agriculture is one of the top industries in the state of Oklahoma, contributing nearly $3.6 billion dollars annually to the state's economy. Farmers in Oklahoma farmed over 9.3 million acres in 1992.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS	
PREREADING:	Read *Weed Control on Rangeland*, by Jim F. Stritzke and Terrence G. Bidwell. OSU Extension Facts No. 2758.
WRITING:	Write a short (one paragraph to one page) essay about the handout. Compare the differences in week control options. Pick the weed control option you think is best and tell why.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. List general factors that affect crop production.
2. Identify major grain crops grown in Oklahoma.
3. List major hay crops grown in Oklahoma.
4. Match plant classes to their specific crops.
5. Label the parts of a grass plant.
6. Identify common pasture and range plants.
7. Collect common pasture and range plants. (Assignment Sheet 1)
8. Identify common weeds.
9. Collect common weeds. (Assignment Sheet 2)
10. Label parts of a tree.
11. Identify common types of trees.
12. Collect common types of tree leaves. (Assignment Sheet 3)

INFORMATION SHEET

INTRODUCTION TO PLANT SCIENCE

E1

OBJECTIVE 1

Optional Activities/
Resources in
Instructor's Guide

List general factors that affect crop production.

WORDS YOU SHOULD KNOW	
soil fertility	amount of nutrients in the soil that supports plant growth

- Soil fertility
    - Nutrients available
    - pH level
    - Type of soil
    - Soil structure
- Climatic conditions
    - Rainfall
    - First and last frost
    - Temperature
- Economic factors
    - Political situations also affect crop production.
- Type of land
    - Terrain
    - Erosion factors
    - Slope and runoff

OBJECTIVE 2

Required Activities/
Resources
- Grain samples

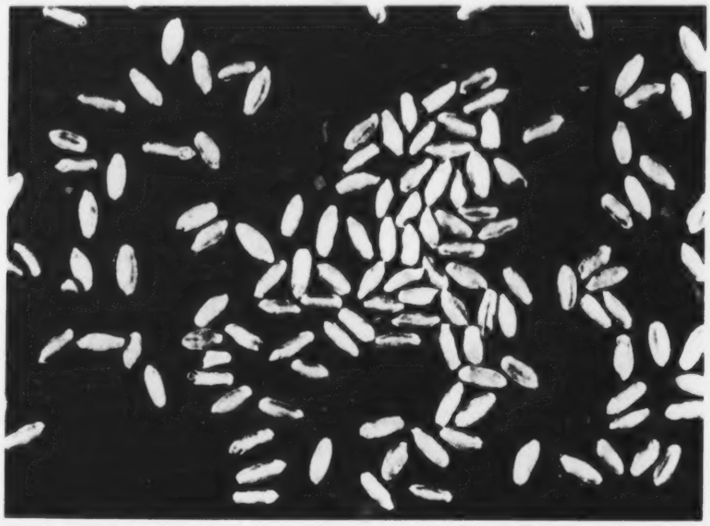
Identify major grain crops grown in Oklahoma.

☞ You will see examples of grain crops.

WORDS YOU SHOULD KNOW	
climax	top ranking native plants in the area
introduced	plants brought into the United States from other countries
native	plant originating in North America

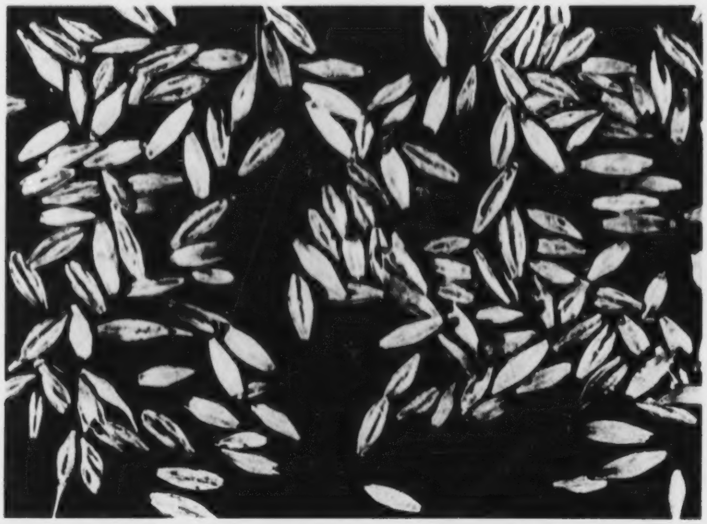
- Wheat

FIGURE 1



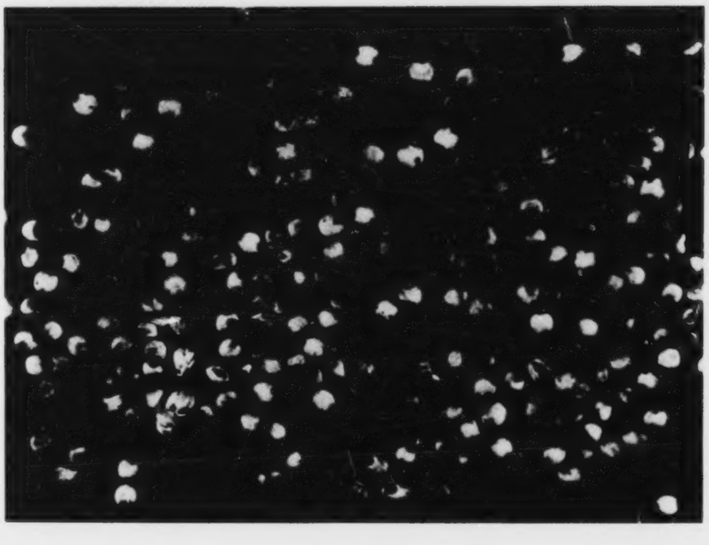
- Barley

FIGURE 2



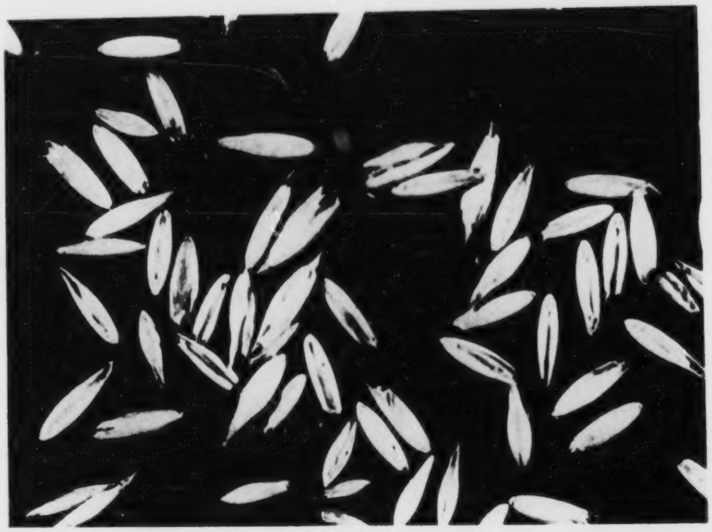
- Grain sorghum

FIGURE 3



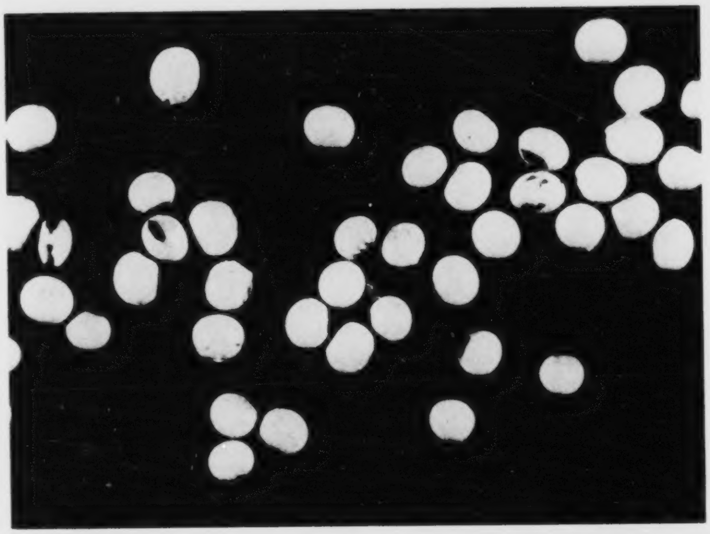
- Oats

FIGURE 4



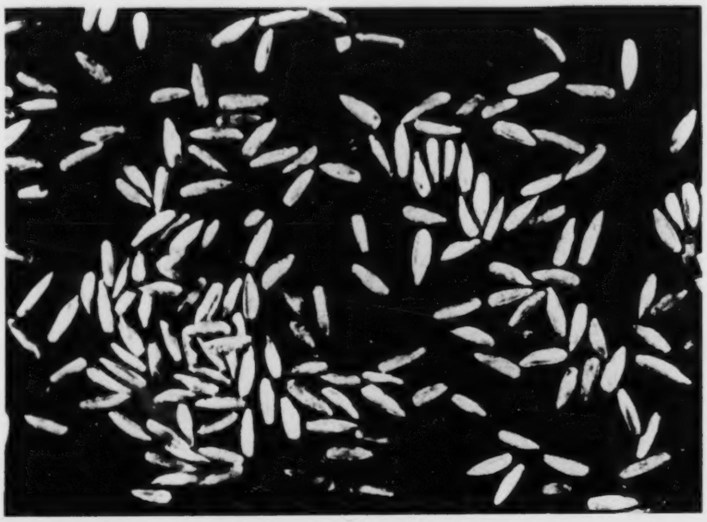
- Soybeans

FIGURE 5



- Rye

FIGURE 6



OBJECTIVE 3

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

List major hay crops grown in Oklahoma.

Discuss the question "What persons in our area raise hay crops and what type hay do they raise?"

WORDS YOU SHOULD KNOW	
legume	soil improving plant that produces nitrogen EXAMPLES: soybeans, alfalfa

NOTE: Hay crops of all kinds contribute over 56 million dollars to the Oklahoma economy.

- Alfalfa
- Native grasses
- Sudan
- Millet

OBJECTIVE 4

Required Activities/
Resources
– Plant samples

Optional Activities/
Resources in
Instructor's Guide

Match plant classes to their specific crops.

You will see examples of plants.

WORDS YOU SHOULD KNOW	
cereal	grass grown to be used for feed or seed
pulse	leguminous plant or its seed

- Cereal
  - ☐ Wheat
  - ☐ Corn
  - ☐ Oats
- Root
  - ☐ Potatoes
  - ☐ Sweet potatoes
  - ☐ Turnips
- Tree
  - ☐ Pecans
  - ☐ Apples
  - ☐ Peaches
  - ☐ Pears
- Oil seed

  ☑ **NOTE:** These crops may be used for their seed or their oil.

  - ☐ Soybeans
  - ☐ Peanuts
  - ☐ Cottonseeds
  - ☐ Sunflowers

- Pulse

  ☑ **NOTE:** Pulse includes chiefly those legumes with large seeds used for food.

  ☐ Beans

  ☐ Peas

OBJECTIVE 5

Required Activities/
Resources
- Transparency Master 1

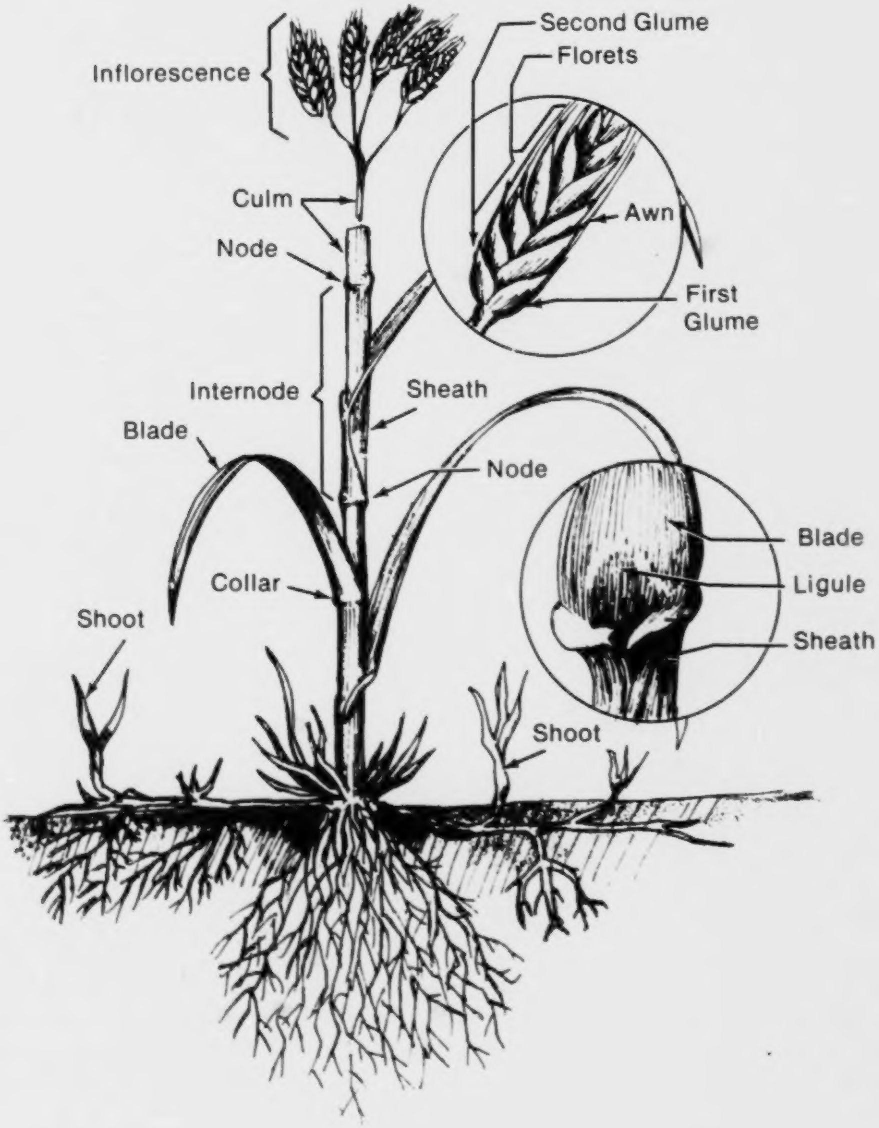
Optional Activities/
Resources in
Instructor's Guide

Label the parts of a grass plant.

You will see a transparency showing the parts of a grass plant.

All grass plants have the same basic parts. Knowing the parts of the plant will help you identify the plant.

FIGURE 7


Inflorescence
Second Glume
Florets
Culm
Node
Awn
First Glume
Internode
Sheath
Blade
Node
Blade
Ligule
Sheath
Collar
Shoot
Shoot

OBJECTIVE 6

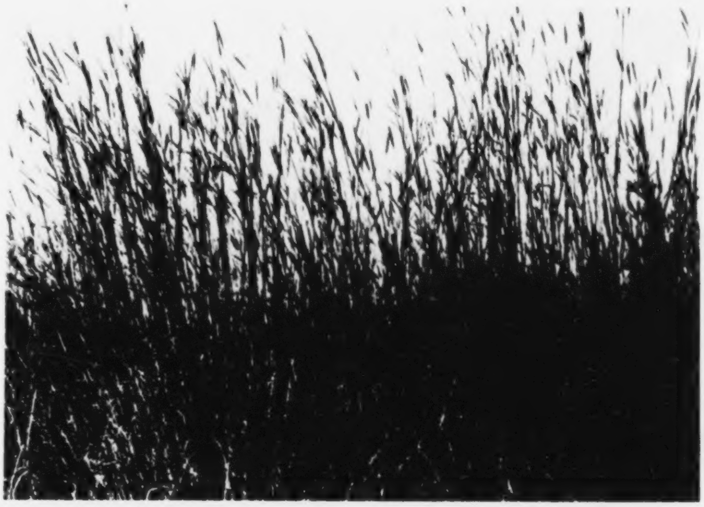
Optional Activities/ Resources in Instructor's Guide

Identify common pasture and range plants.

WORDS YOU SHOULD KNOW	
annual	plant that completes its life cycle in one year
cool-season plant	plant that grows during the fall, winter, or spring
decreaser	plant that decreases on a range when exposed to heavy grazing
forage	livestock feeds, such as pasture, hay, or silage
increaser	plant that increases on a range when decreasers are reduced
invader	plant that comes onto a range after both increasers and decreasers have been reduced
perennial	plant that lives more than one year and, in some cases, produces seeds the first year
range	extensive area of natural pastureland
warm-season plant	plant that grows during the summer and early fall

- Big bluestem
    - Characteristics
        - Perennial
        - Warm season
        - Native
        - Decreaser
        - Good grazer
    - Plant
        - Tall grass
        - Short roots
        - Stemmy hair at base
    - Seed
        - Long, very small
        - Head branches into three parts resembling a turkey's foot

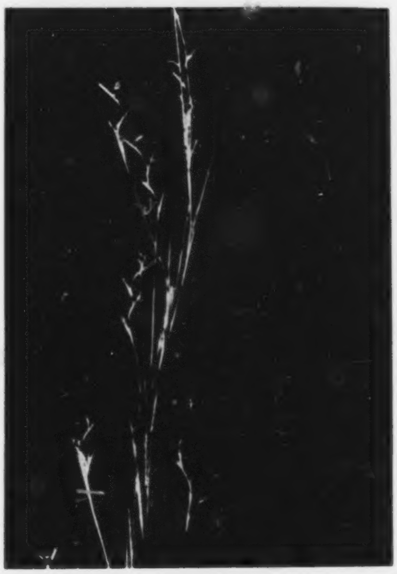
FIGURE 8



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Little bluestem
  - Characteristics
    - Perennial
    - Warm season
    - Native
    - Decreaser
    - Good grazer
  - Plant
    - Deep roots
    - Bluish stem
    - Leaves tend to fold
  - Seed
    - White
    - Very small
    - Soft

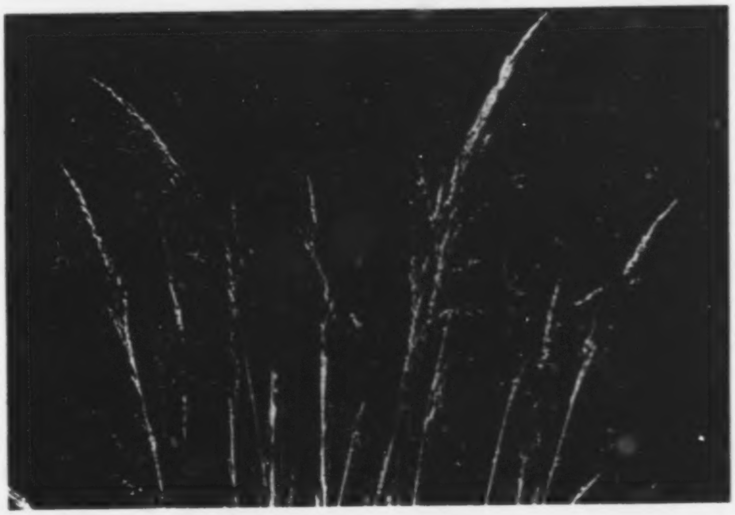
FIGURE 9



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Indian grass
  - ☐ Characteristics
    - Perennial
    - Warm season
    - Native
    - Decreaser
    - Good grazer
  - ☐ Plant
    - Tall grass
    - Ligule at base of leaf attached to stem
  - ☐ Seed
    - Golden
    - Produced in heads like sorghum

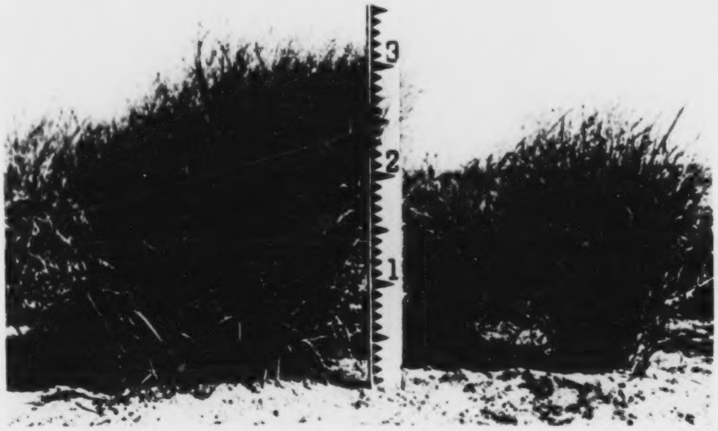
FIGURE 10



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Switchgrass
    - ☐ Characteristics
        - ▸ Perennial
        - ▸ Warm season
        - ▸ Native
        - ▸ Decreaser
        - ▸ Good grazer
    - ☐ Plant
        - ▸ Tall grass, with large seed head
        - ▸ White hair present at base of leaf
    - ☐ Seed
        - ▸ Large, sprangled head

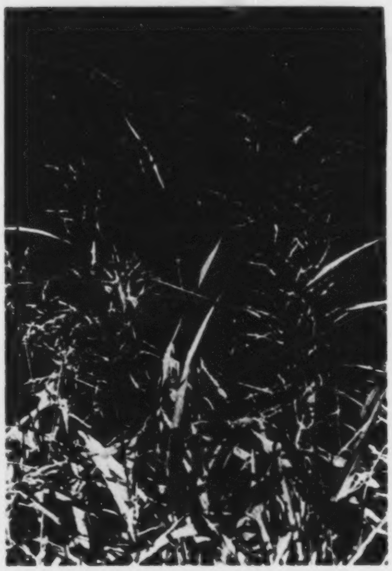
FIGURE 11



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Johnson grass
  - Characteristics
    - Perennial
    - Warm season
    - Introduced
  - Plant
    - Tall grass with wide leaves
    - Leaves have thick, light-colored midvein
  - Seed
    - Glossy black to ivory colored

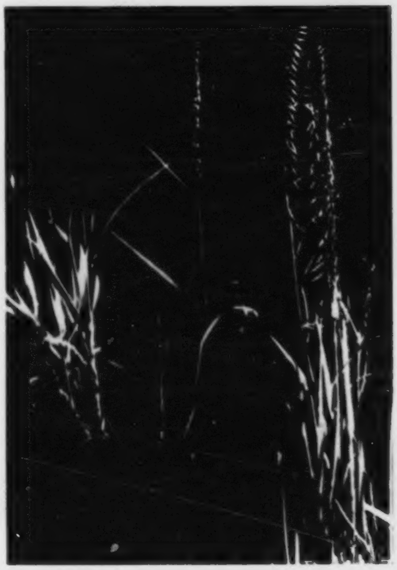
FIGURE 12



Courtesy: Cooperative Extension Service, Oklahoma State University

- Sideoats grama
  - ☐ Characteristics
    - ▸ Perennial
    - ▸ Warm season
    - ▸ Native
    - ▸ Increaser
  - ☐ Plant
    - ▸ Oatlike seeds produced on side of plant
  - ☐ Seed
    - ▸ Small
    - ▸ Produced in large quantities

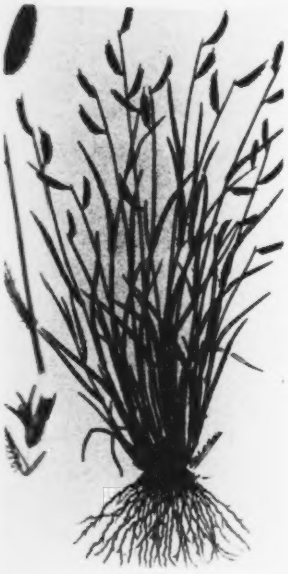
FIGURE 13



Courtesy: Cooperative Extension Service, Oklahoma State University

- Hairy grama
  - ☐ Characteristics
    - ▸ Perennial
    - ▸ Warm season
    - ▸ Native
    - ▸ Increaser
  - ☐ Plant
    - ▸ Short grass
    - ▸ Comblike seed head
  - ☐ Seed
    - ▸ Covered with hair
    - ▸ Curved, needlelike points

FIGURE 14



Courtesy: Cooperative Extension Service, Oklahoma State University.

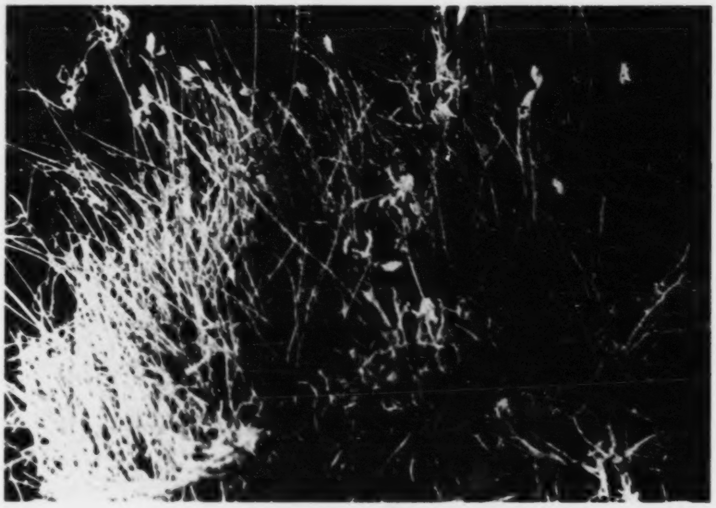
- Blue grama
  - Characteristics
    - Perennial
    - Warm season
    - Native
    - Increaser
  - Plant
    - Bunch grass
    - 10 to 29 inches high
    - Reproduced by seed
  - Seed
    - Curved
    - Resembles eyebrow

FIGURE 15

Courtesy: Cooperative Extension Service, Oklahoma State University

- Buffalo grass
    - Characteristics
        - Perennial
        - Warm season
        - Native
        - Increaser
    - Plant
        - Short grass
        - Leaves close to ground
    - Seed
        - Produced in burs
        - Burs contain one to four seeds

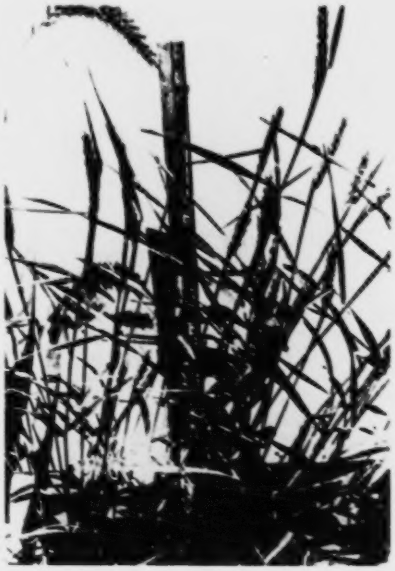
FIGURE 16



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Wild rye
  - Characteristics
    - Perennial
    - Cool season
    - Native
    - Increaser
  - Plant
    - Tall grass
    - Spearlike blades
  - Seed
    - Long awn
    - Curve downward after maturing

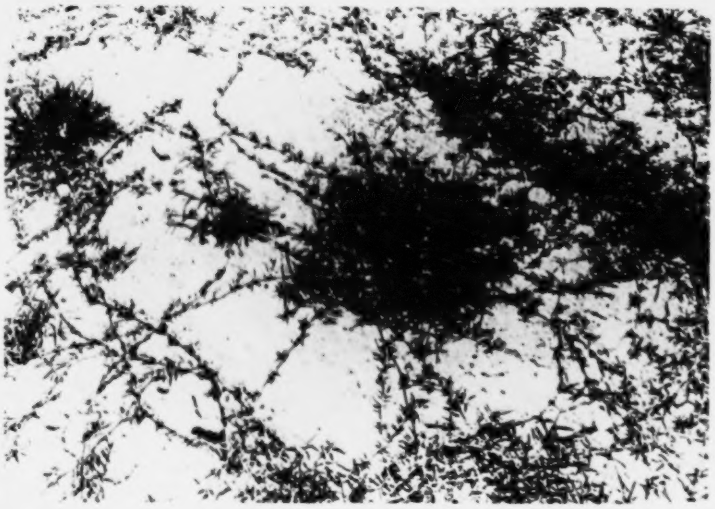
FIGURE 17



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Bermuda grass
    - ☐ Characteristics
        - ▸ Perennial
        - ▸ Warm season
        - ▸ Introduced
        - ▸ Good grazer
    - ☐ Plant
        - ▸ Sod forming
        - ▸ Spreads by runners
    - ☐ Seed
        - ▸ Produced in slender spikeflowering heads

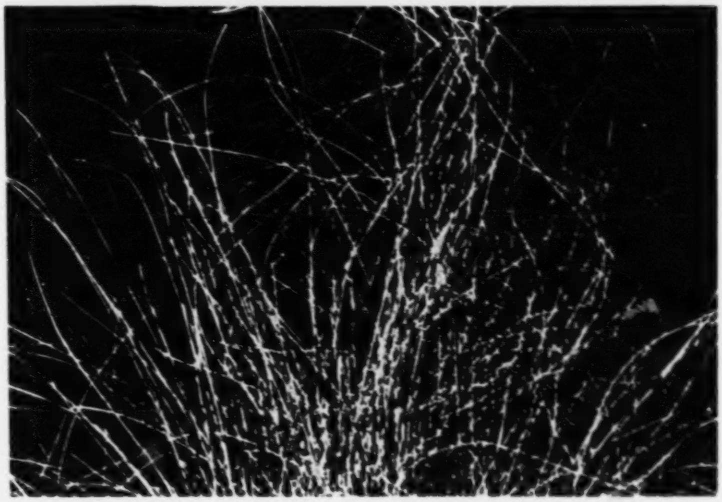
FIGURE 18



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Weeping lovegrass
  - ☐ Characteristics
    - Perennial
    - Warm season
    - Introduced
  - ☐ Plant
    - Tall bunch grass
    - Blue flower
    - Tapered leaves
  - ☐ Seed
    - Loose head
    - Dull straw-colored to gray
    - 8 to 12 inches long
    - Shaped like a wheat kernel

FIGURE 19



Courtesy: Cooperative Extension Service, Oklahoma State University.

OBJECTIVE 7 **Complete Assignment Sheet 1.**

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

Identify common weeds.

WORDS YOU SHOULD KNOW	
weed	undesirable plant growing with a crop

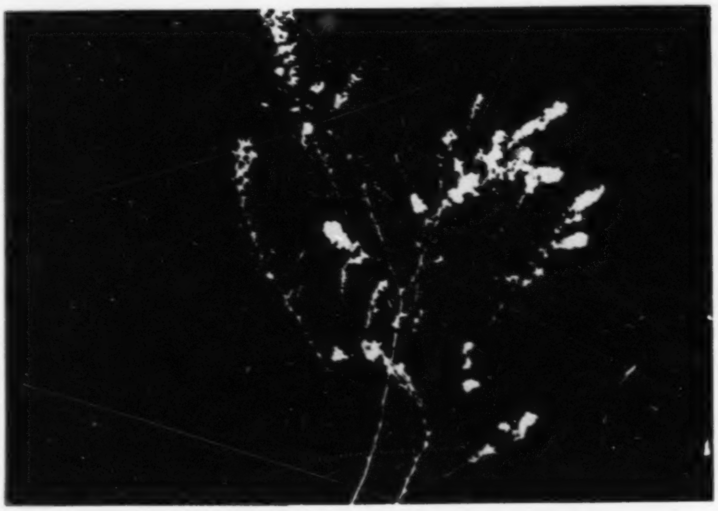
- Annual ragweed
    - Characteristics
        - Native
        - Warm season
        - Perennial
    - Plant
        - Erect stem that branches into a bushy growth
        - Covered with dense, minute hairs and tassel-like greenish flowers
    - Seed
        - Dark colored
        - Woody hull with pointed tip
        - Tip surrounded by short spines

FIGURE 20

Courtesy: Cooperative Extension Service, Oklahoma State University.

- Heath aster
    - ☐ Characteristics
        - ▸ Perennial
        - ▸ Warm season
        - ▸ Native
    - ☐ Plant
        - ▸ Large bushlike clumps
        - ▸ Small, stiff leaves
        - ▸ White flower

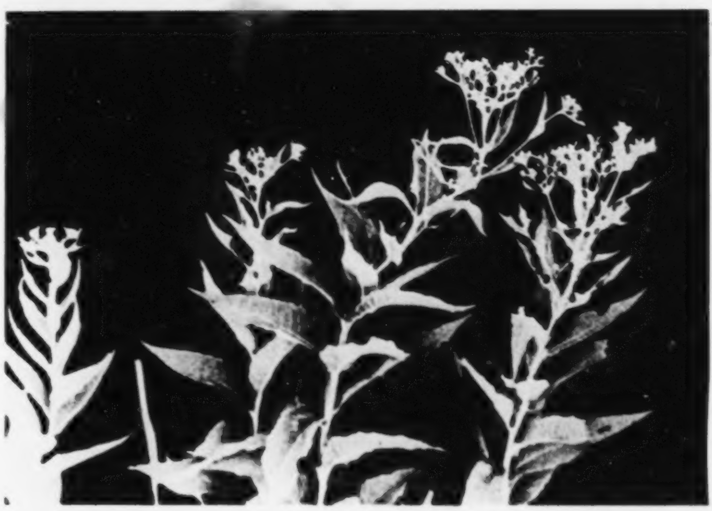
FIGURE 21



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Ironweed
  - ☐ Characteristics
    - Perennial
    - Warm season
    - Native
  - ☐ Plant
    - Stiff, erect woody stem, covered with short dense hair
    - Upper portion of stem branched
    - 2 to 5 feet tall
  - ☐ Seed
    - Reddish purple
    - Uniform in shape
    - Oblong
    - Prominently ribbed with short bristles

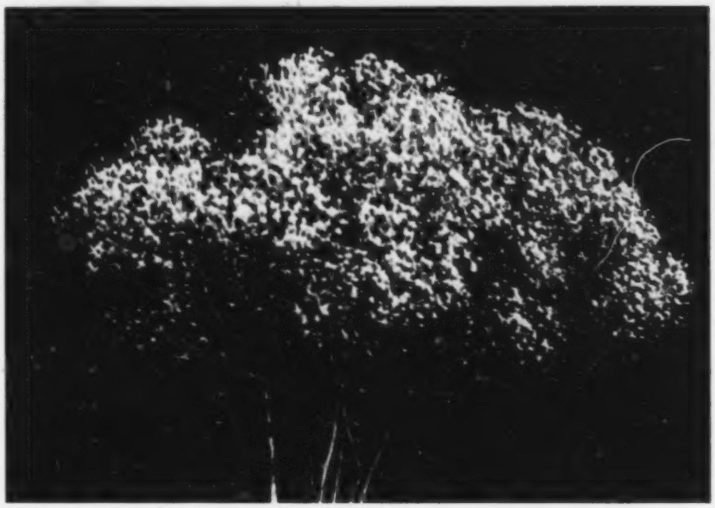
FIGURE 22



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Common broomweed
    - ☐ Characteristics
        - ▸ Annual
        - ▸ Warm season
        - ▸ Native
    - ☐ Plant
        - ▸ Tough woody stem
        - ▸ Branches near the top

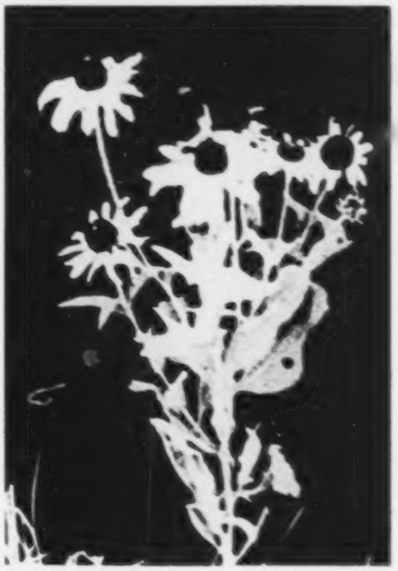
FIGURE 23



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Black-eyed Susan
  - ☐ Characteristics
    - Perennial
    - Warm season
    - Native
  - ☐ Plant
    - Individual or clump stems
    - Bristly hairs
    - Few branches

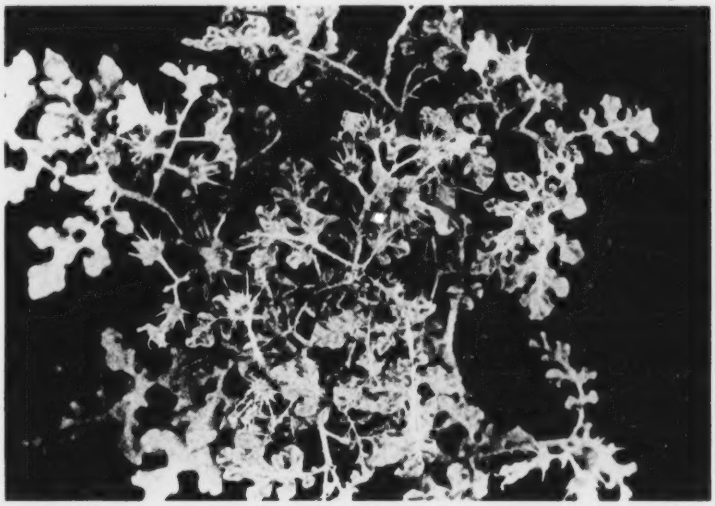
FIGURE 24



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Buffalobur
  - ☐ Characteristics
    - Annual
    - Warm season
    - Native
  - ☐ Plant
    - Erect stems
    - 6 to 24 inches tall
    - Hairy and densely covered with stiff, long, prickles or spines
  - ☐ Seed
    - Brownish-black
    - Round
    - Flattened
    - Borne in a small berry-covered bur

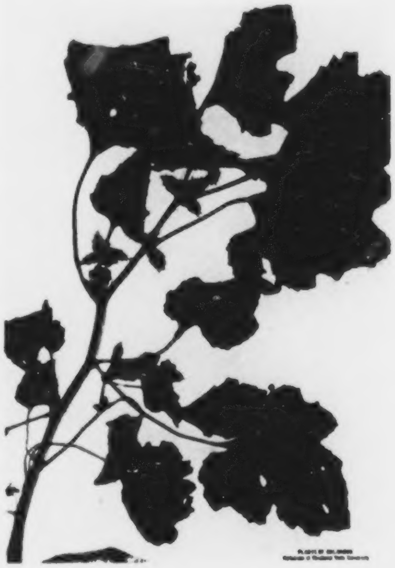
FIGURE 25



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Cocklebur
    - Characteristics
        - Annual
        - Warm season
        - Introduced
    - Plant
        - Stout stems
        - Spreading branches
        - Alternate leaves
        - Rough to the touch
    - Seed
        - Small, hard, oval bur
        - Strong, hooked spike

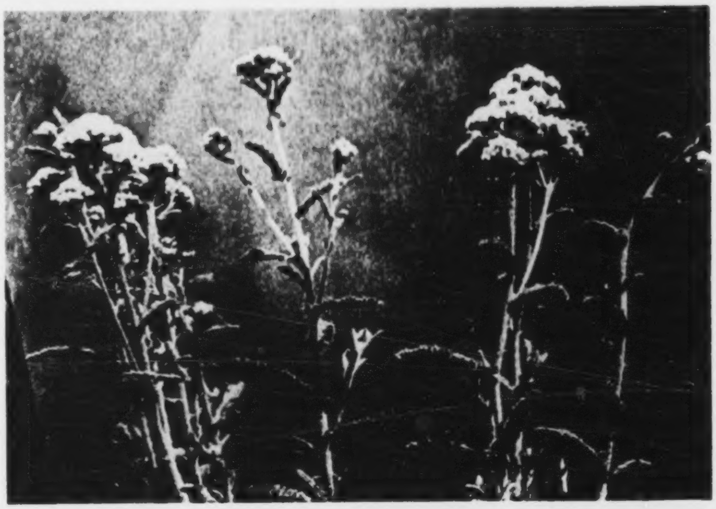
FIGURE 26



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Common yarrow
  - Characteristics
    - Perennial
    - Warm season
    - Native
  - Plant
    - Tall, erect stems
    - Stems covered with long silky hairs
  - Seed
    - Flattened
    - Oblong
    - White to gray color

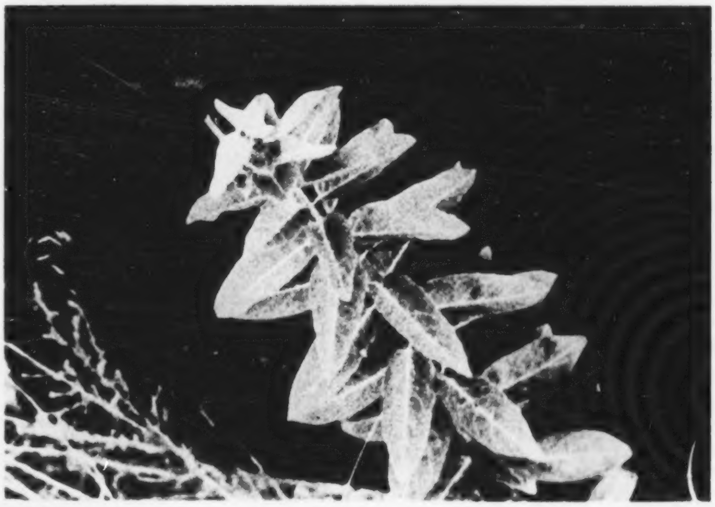
FIGURE 27



Courtesy: Cooperative Extension Service, Oklahoma State University.

- Broadleaf milkweed
  - ☐ Characteristics
    - ▸ Perennial
    - ▸ Warm season
    - ▸ Native
  - ☐ Plant
    - ▸ Stiff, nonbranching stems
    - ▸ Opposite leaves are large and thick
  - ☐ Seed
    - ▸ Plumed, flattened, round seeds
    - ▸ Contained in pointed pods
    - ▸ Pods are 1 to 3 inches long

FIGURE 28



Courtesy: Cooperative Extension Service, Oklahoma State University

OBJECTIVE 9 **Complete Assignment Sheet 2.**

OBJECTIVE 10

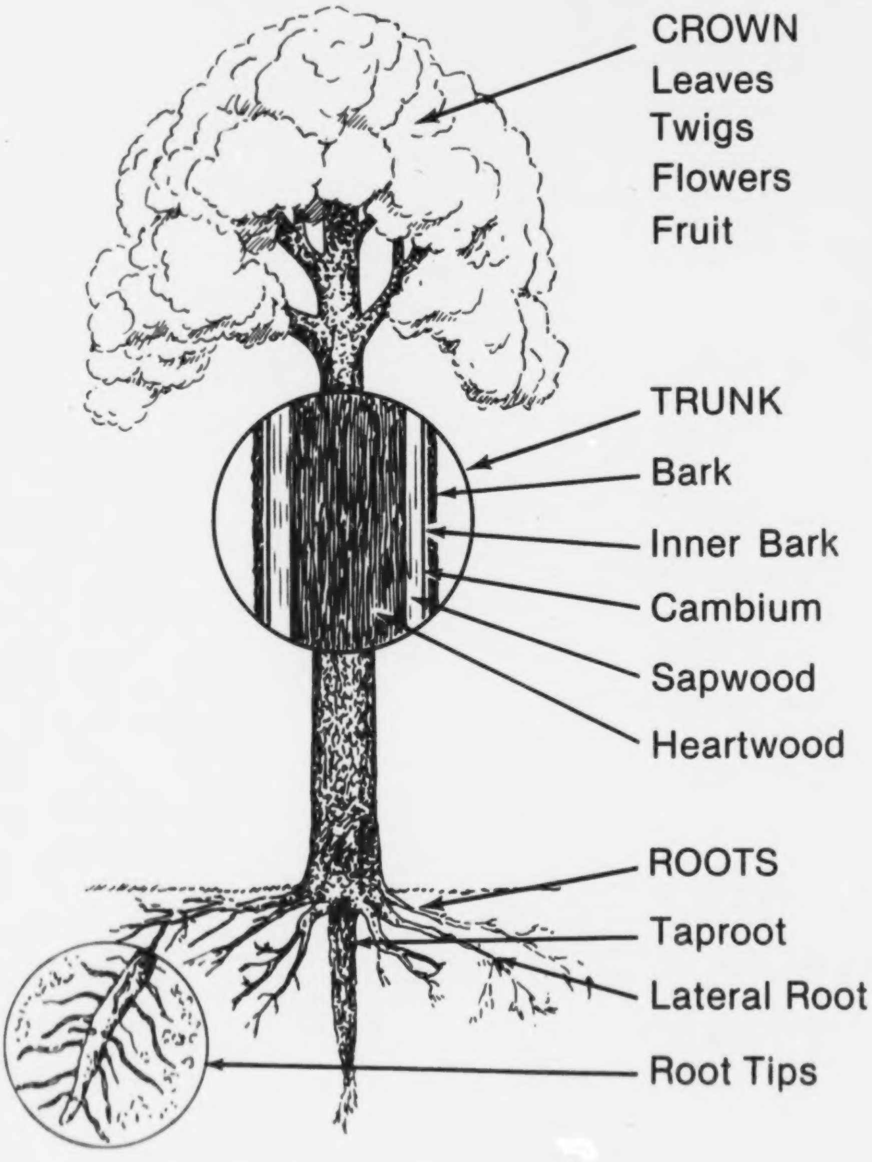
Required Activities/
Resources
- Transparency Master 2

Label parts of a tree.

You will see a transparency showing the parts of a tree.

☑ **NOTE:** Leaves, twigs, flowers, and fruit are all part of the crown. Under the bark are several layers of wood including inner bark, cambium, sapwood, and heartwood. All trees have two types of roots called tap roots and lateral roots.

FIGURE 29


CROWN
Leaves
Twigs
Flowers
Fruit
TRUNK
Bark
Inner Bark
Cambium
Sapwood
Heartwood
ROOTS
Taproot
Lateral Root
Root Tips

OBJECTIVE 11 **Identify common types of trees.**

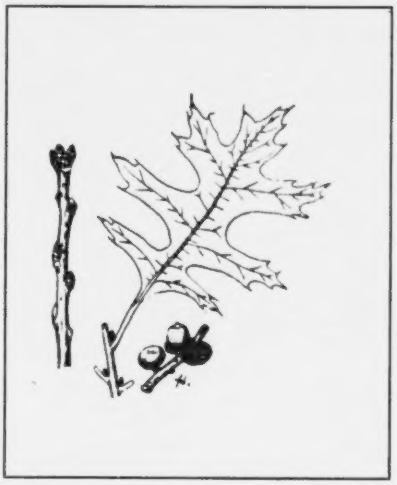
Optional Activities/
Resources in
Instructor's Guide

WORDS YOU SHOULD KNOW	
deciduous	plant that loses its leaves at the end of a growing season
evergreen	plant that maintains its leaves throughout the year
forest	thick growth of trees

☑ **NOTE:** Most trees are identified by examining leaf and seed configurations.

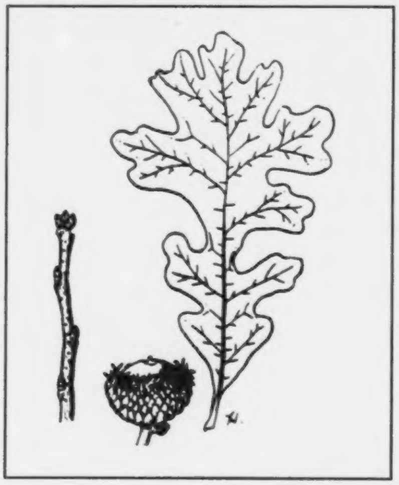
- Pin Oak

FIGURE 30



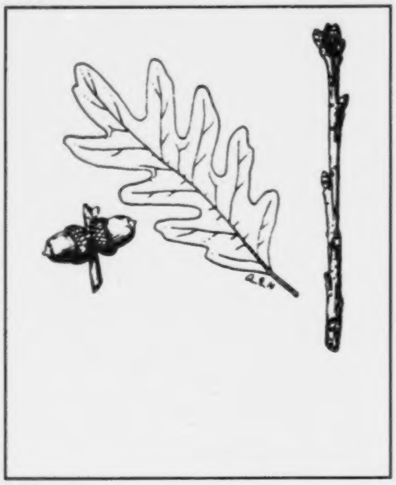
- Bur Oak

FIGURE 31



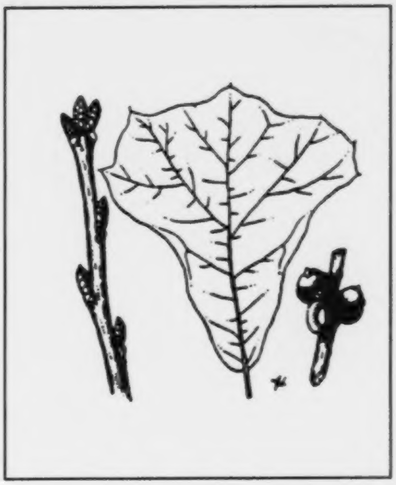
- White oak

FIGURE 32



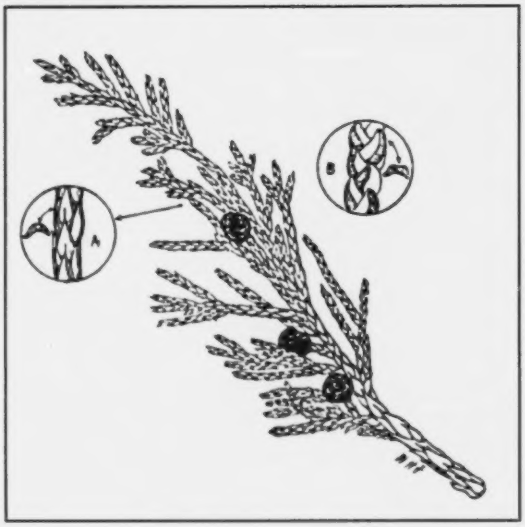
- Blackjack oak

FIGURE 33



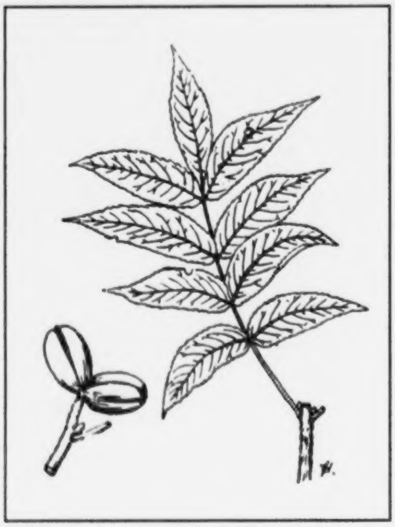
- Eastern red cedar

FIGURE 34



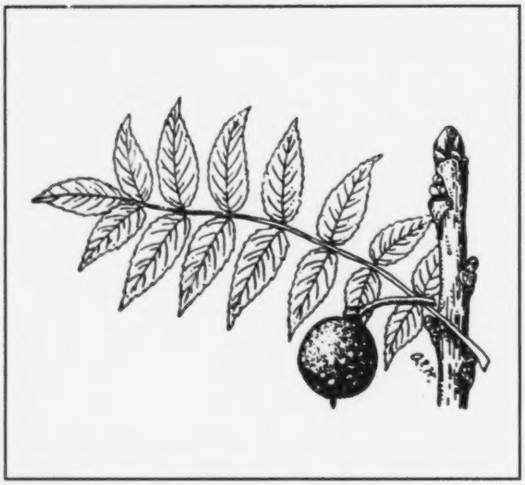
- Pecan

FIGURE 35



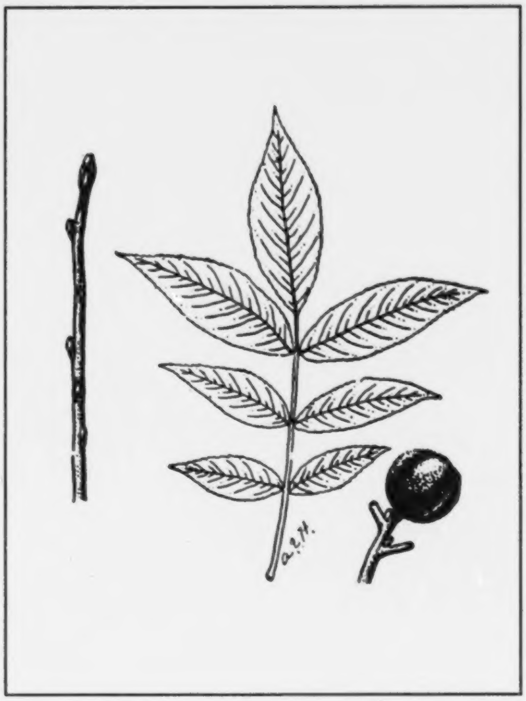
- Black walnut

FIGURE 36



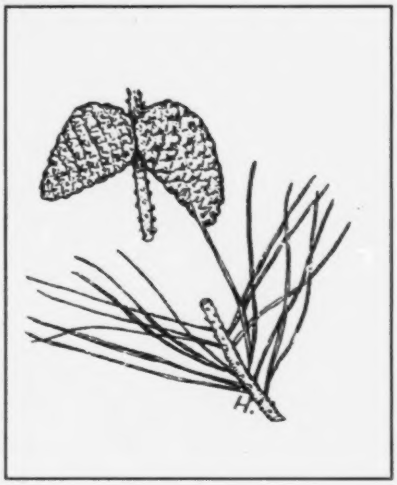
- Black hickory

FIGURE 37



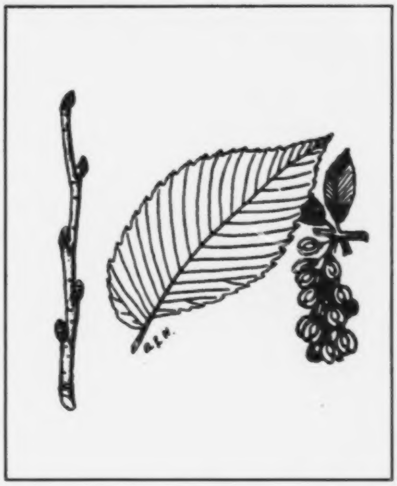
- Scotch pine

FIGURE 38



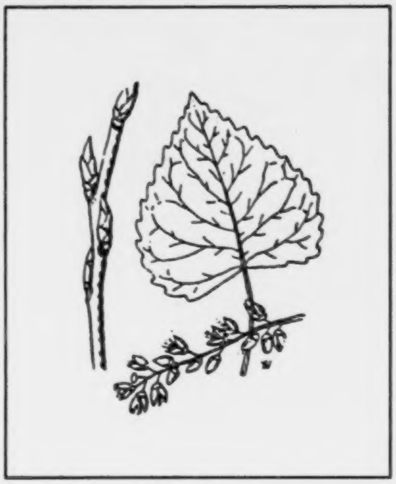
- American elm

FIGURE 39



- Plains cottonwood

FIGURE 40



Figures 30 - 40 used with permission of the Oklahoma Forestry Division, Oklahoma Department of Agriculture.

OBJECTIVE 12 **Complete Assignment Sheet 3.**

ASSIGNMENT SHEET 1

INTRODUCTION TO PLANT SCIENCE

E1

Name ______________________ Score __________

OBJECTIVE 7

Collect common pasture and range plants.

EQUIPMENT AND SUPPLIES

- Heavy construction paper
- Tags
- Clear, adhesive tape
- Pasture and range plants

INSTRUCTIONS

Reading Comprehension
- Draw conclusions

Functional Reading
- Follow written instructions

Functional Writing
- Complete forms and records

General Science
- Collect specimens

Life Science
- Identify/classify living organisms

Cognitive Activities
- Collect/record information

Pasture and range plants are very important to farmers and ranchers. For approximately seven months of the year these plants provide feed for livestock. As a production agriculturist, you must know what types of plants are available on your farm or ranch to provide properly managed pastures.

Collect ten pasture or range plants found on your farm or in your community. Assign each plant a number that corresponds to the numbers on the following chart. Identify the plant as a cool- or warm-season plant; as an increaser, decreaser, or invader; and as either a perennial or annual.

Plant No.	Common Name	Season		Increaser	Invader	Decreaser	Perennial	Annual
		Cool	Warm					
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

ASSIGNMENT SHEET 2

INTRODUCTION TO PLANT SCIENCE

E1

Name ______________________________ Score __________

OBJECTIVE 9

Collect common weeds.

EQUIPMENT AND SUPPLIES

- Heavy construction paper
- Tags
- Clear, adhesive tape
- Weed plants

INSTRUCTIONS

Reading Comprehension
- Draw conclusions

Research and Reference
- Use standard references

Functional Reading
- Follow written instructions

Functional Writing
- Complete forms and records

General Science
- Collect specimens

Life Science
- Identify/classify living organisms

Cognitive Activities
- Collect/record information

Weeds compete against other plants for nutrients and can even destroy a range or pasture. Production agriculturists must be able to identify common weeds in the community in order to select the appropriate type of chemical to use in controlling their growth and spread.

Collect ten weeds found on your farm or within your community. Assign each weed a number on the following chart. Write the common name of the weed, and identify each weed as a warm- or cool-season plant; a decreaser, increaser, or invader; and as either a perennial or annual.

Weed No.	Common Name	Season		Increaser	Invader	Decreaser	Perennial	Annual
		Cool	Warm					
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

ASSIGNMENT SHEET 3

INTRODUCTION TO PLANT SCIENCE

E1

Name ______________________________ Score __________

OBJECTIVE 12

Collect common types of tree leaves.

EQUIPMENT AND SUPPLIES

- Heavy construction paper
- Tags
- Clear, adhesive tape
- Tree leaves

INSTRUCTIONS

Collect ten leaves from trees growing on your farm or in your community. Place each leaf on a sheet of construction paper and tape the leaf to secure it. Number the sheets of paper one through ten. Place the leaves inside a magazine and place a heavy object on the magazine to press the leaves flat. On the following chart, name the tree that the leaf came from, and identify the tree as either deciduous or evergreen.

Reading Comprehension
- Draw conclusions

Research and Reference
- Use standard references

Functional Reading
- Follow written instructions

Functional Writing
- Complete forms and records

General Science
- Collect specimens

Life Science
- Identify/classify living organisms

Cognitive Activities
- Collect/record information

Leaf No.	Common Name of Tree	Deciduous	Evergreen
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

OBJECTIVE SHEET

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY

F1

INTRODUCTION

The agricultural industry is becoming more technical and sophisticated every year. Many occupations involve the use of modern, highly technical agricultural equipment. Proficiency in this area can be helpful in leisure activities, home repairs, preventative maintenance, and employment.

FOCUS ASSIGNMENTS

Reading Comprehension

- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language

- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition

- Use complete sentences

FOCUS ASSIGNMENTS	
PREREADING:	Go to the classroom library or the school library and find a magazine that deals with agriculture or agricultural mechanics. Find an article that deals with mechanics or safety as it relates to mechanics in agriculture and read it.
WRITING:	Write a one-page essay on how the information in the news article might affect your future agricultural enterprises.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Define agricultural mechanics.
2. List areas of agricultural mechanics.
3. State the importance of agricultural mechanics to the total agricultural industry.
4. Identify basic carpentry tools.
5. Identify basic plumbing tools.
6. Identify common shop tools.
7. State reasons for maintaining a clean and orderly shop.
8. List areas of responsibility in maintaining an orderly shop area.
9. Match areas of the shop to the correct cleaning equipment and supplies needed for each area.
10. State the purposes of the safety color code system.
11. Match the colors of the safety color code system to their correct designations.
12. Match classes of fires to their correct descriptions.
13. State general safety precautions for the shop or work area.
14. State conditions in which eye protection is needed in agricultural mechanics.
15. Match agricultural mechanics occupational titles to their correct descriptions.
16. Analyze case studies to determine ways to prevent accidents. (Assignment Sheet 1)
17. Survey agricultural mechanics occupations. (Assignment Sheet 2)

INFORMATION SHEET

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY

F1

OBJECTIVE 1

Optional Activities/ Resources in Instructor's Guide

Define agricultural mechanics.

- agricultural mechanics – area of agriculture that deals with mechanics, repair, maintenance, and construction of machinery, equipment, and facilities used in agriculture

OBJECTIVE 2

Optional Activities/ Resources in Instructor's Guide

List areas of agricultural mechanics.

- agricultural mechanical skills

  ☑ **NOTE:** This area of agricultural mechanics includes selection, sharpening, care, and correct use of shop tools and equipment as well as woodworking, simple carpentry, welding, and related skills.

- agricultural power and machines

  ☑ **NOTE:** This area deals primarily with internal-combustion engines and the machinery on which these engines are used.

- agricultural structures

  ☑ **NOTE:** This area of agricultural mechanics deals primarily with planning, construction, maintenance, and repair of agricultural buildings.

- electrical power and processing

  ☑ **NOTE:** This area of agricultural mechanics includes all agriculturally related electrical work.

- soil and water management

  ☑ **NOTE:** This area deals primarily with surveying and shaping the land to conserve water and soil.

OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

State the importance of agricultural mechanics to the total agricultural industry.

- Most agricultural work involves mechanical skills or activities.
- A large percentage of machinery is out of adjustment.
- Maintenance adjustments and repairs on machinery, tools, and equipment are ongoing and critical.
- Construction is necessary for expansion.
- A great deal of money may be saved by doing simple repairs around the home.

OBJECTIVE 4

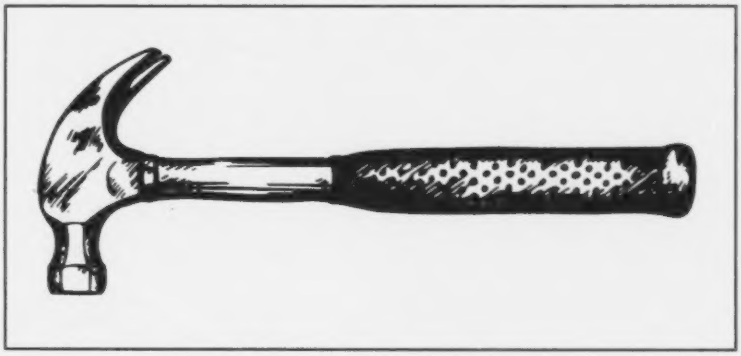
Optional Activities/
Resources in
Instructor's Guide

Identify basic carpentry tools.

☑ **NOTE:** Many of the following tools may be used by workers other than carpenters, and carpenters will use many tools in addition to those listed.

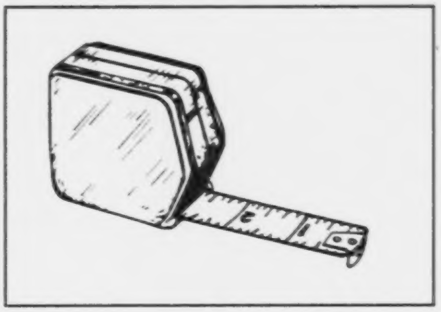
- claw hammer

FIGURE 1



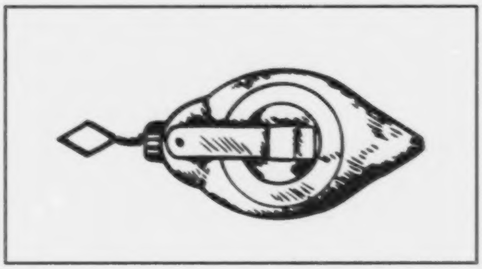
- steel tape

FIGURE 2



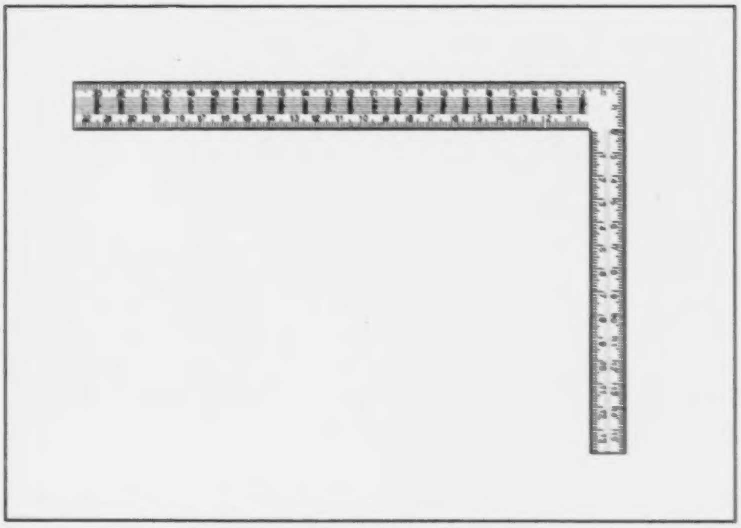
- chalk line

FIGURE 3



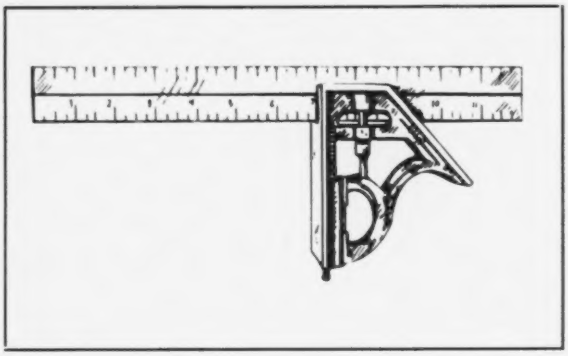
- framing square

FIGURE 4



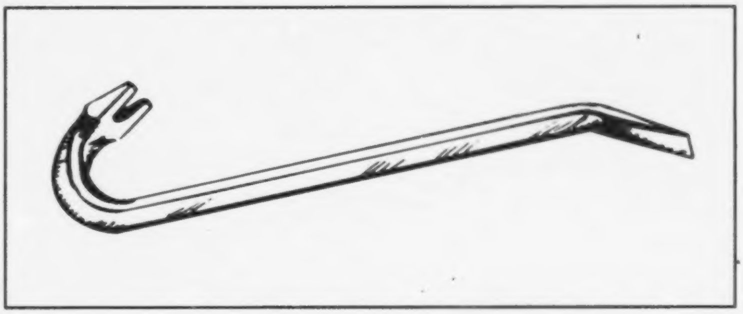
- combination square

FIGURE 5



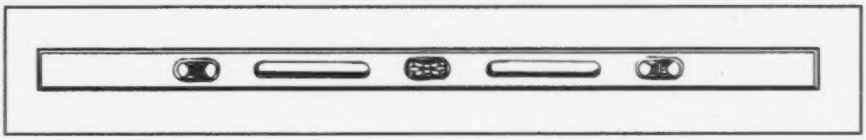
- wrecking bar

FIGURE 6



- level

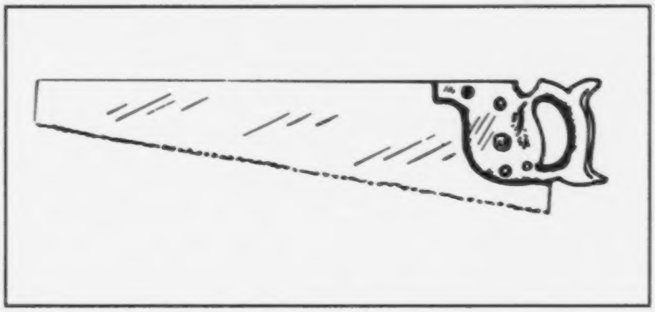
FIGURE 7



- handsaw

☑ **NOTE:** Handsaws are available as either crosscut or rip. The teeth determine the use of these saws.

FIGURE 8



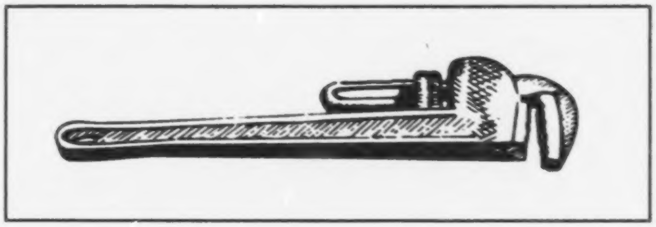
OBJECTIVE 5

Optional Activities/ Resources in Instructor's Guide

Identify basic plumbing tools.

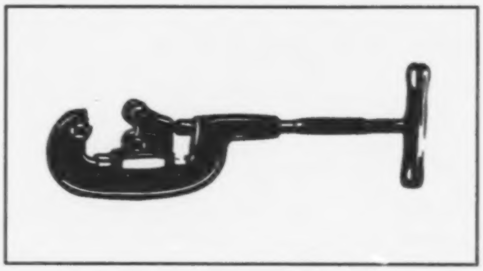
- pipe wrench

FIGURE 9



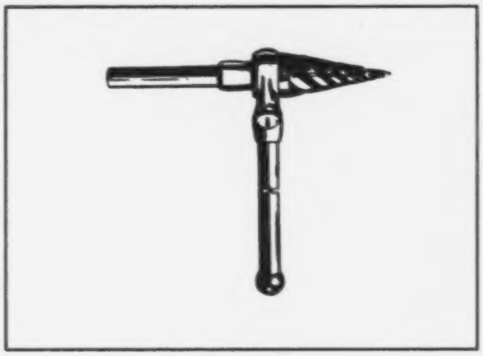
- pipe cutter

FIGURE 10



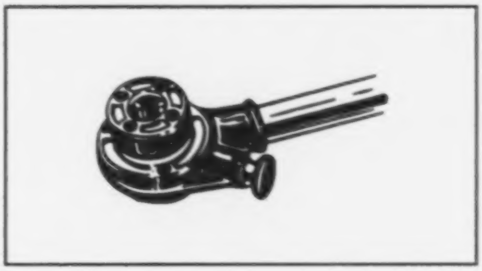
- pipe reamer

FIGURE 11



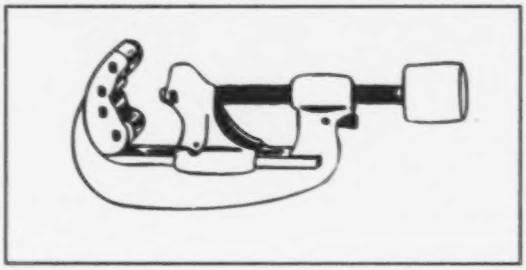
- pipe threading die and die stock

FIGURE 12



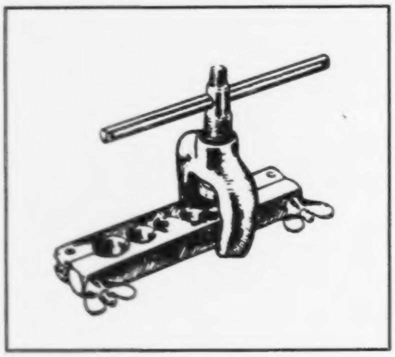
- tubing cutter

FIGURE 13



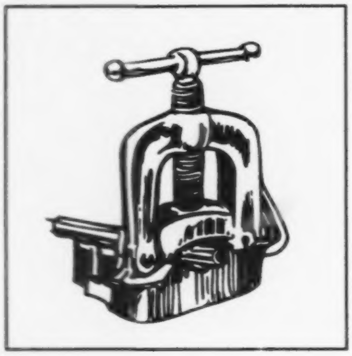
- flaring tool

FIGURE 14



- pipe vise

FIGURE 15



OBJECTIVE 6

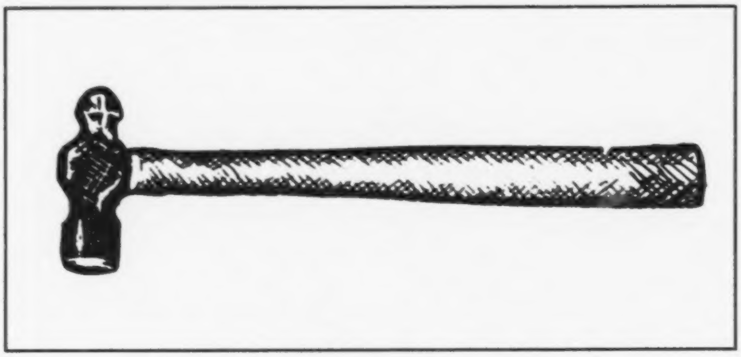
Identify common shop tools.

Optional Activities/
Resources in
Instructor's Guide

☑ **NOTE:** In some cases tools are identified by what was originally a brand name, but the brand name has now become the commonly accepted name.

- ball-peen hammer

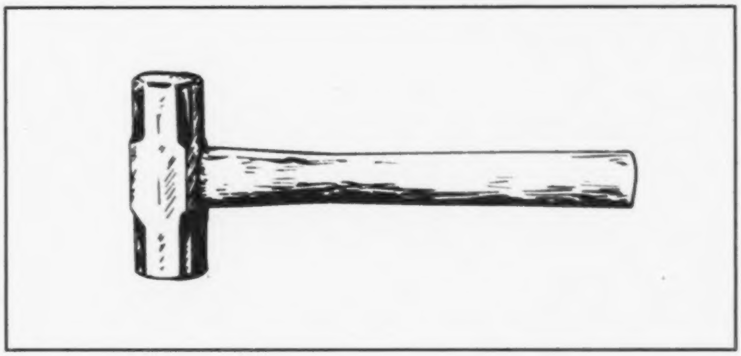
FIGURE 16



- shop hammer

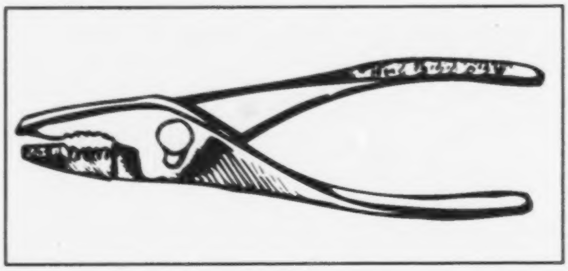
☑ **NOTE:** This type of hammer is available in a variety of weights and sizes. The heavier hammers are referred to as sledgehammers.

FIGURE 17



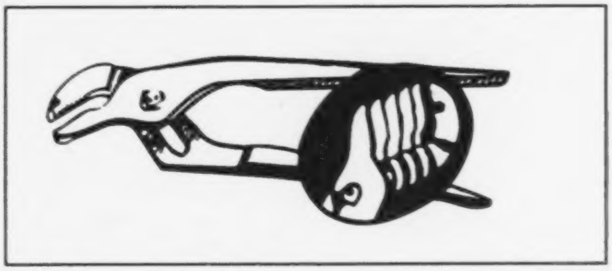
- combination pliers

FIGURE 18



- channel-lock pliers

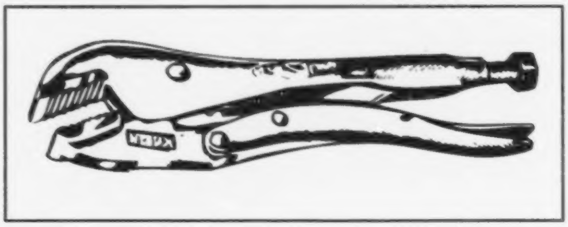
FIGURE 19



- vise-grip pliers

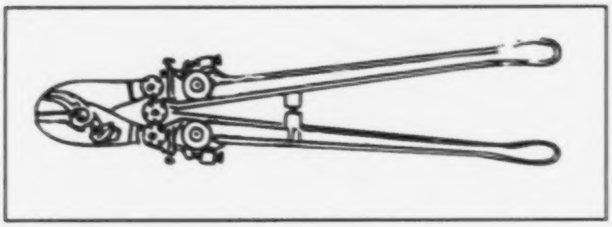
☑ **NOTE:** Vise-grips are available with a variety of jaws and clamps for holding many different types of materials.

FIGURE 20



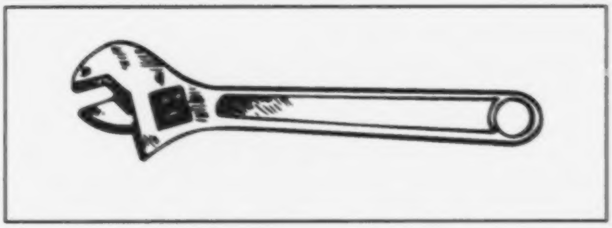
- bolt cutters

FIGURE 21



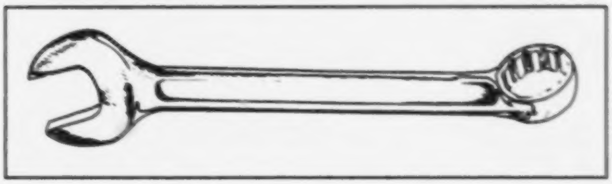
- crescent wrench

FIGURE 22



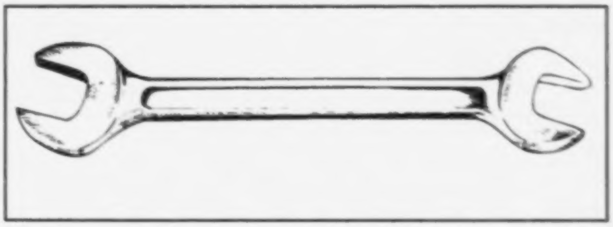
- combination wrench

FIGURE 23



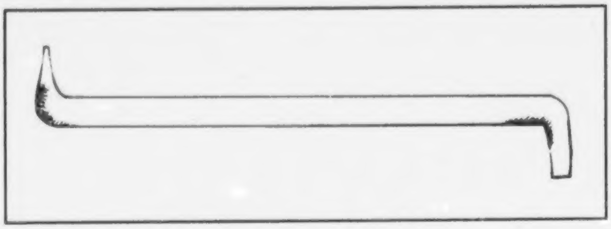
- open-end wrench

FIGURE 24



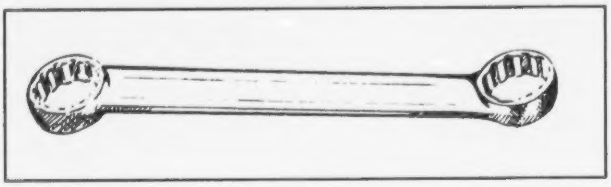
- offset screwdriver

FIGURE 25



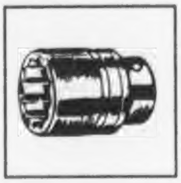
- box-end wrench

FIGURE 26



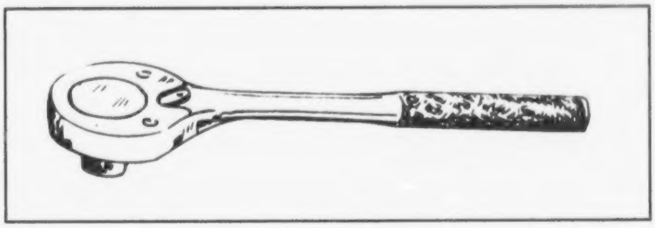
- socket

FIGURE 27



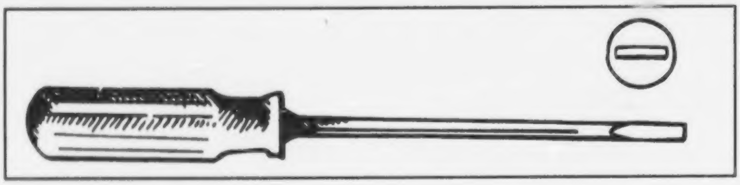
- ratchet

FIGURE 28



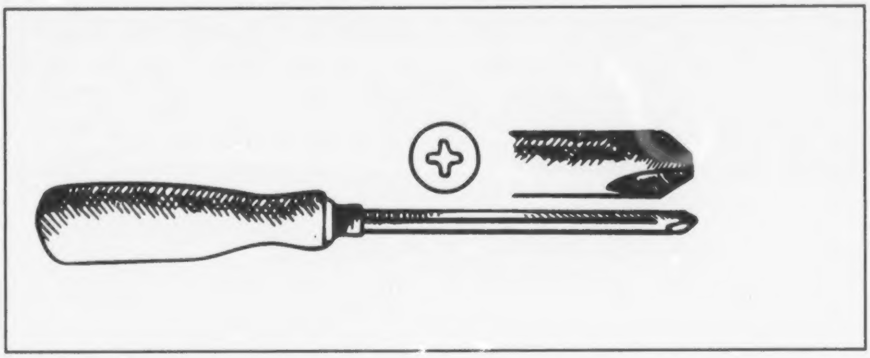
- common screwdriver

FIGURE 29



- Phillips screwdriver

FIGURE 30



OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

State reasons for maintaining a clean and orderly shop.

- allows workers to be more productive
- promotes safety
- prolongs the life of tools and equipment

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

List areas of responsibility in maintaining an orderly shop area.

☑ **NOTE:** To develop a shop clean-up system for a vocational agriculture shop class, each student is assigned cleaning responsibilities.

- floor cleaning

  Examples: Sweep floors after each class period. Work with people who are dusting equipment and work surfaces to assure that the entire work area gets cleaned. Return cleaning equipment and supplies to proper location.

- equipment cleaning and maintenance

  Examples: Clean dust from shop equipment and work surfaces, using handbrooms or dustrags. Notify the instructor of any equipment or cords needing repair or adjustments. Return cleaning equipment and supplies to the proper locations. Make sure that all equipment is turned off.

- toolroom management

  Examples: Check tools in and out to students during class time. Clean the tools. Notify the instructor of broken, improperly adjusted, and missing tools.

- scrap materials handling

  Examples: Properly dispose of or store scrap materials.

- restroom maintenance

  ☑ **NOTE:** In many cases, restroom maintenance is the responsibility of the school maintenance department.

  Examples: Clean fixtures and floors in the restroom. Replenish the supplies. Notify the instructor of shortage of the restroom supplies.

- supervision

  Examples: Notify the students of when to start clean-up. See that all students are doing their jobs. Notify the instructor of any problem in the clean-up system. Make sure that all equipment is turned off.

OBJECTIVE 9

Optional Activities/
Resources in
Instructor's Guide

Match areas of the shop to the correct cleaning equipment and supplies needed for each area.

- Floors
  - pushbrooms

- ☐ floor sweep

  ☑ **NOTE:** Floor sweep is a treated sawdust material used in conjunction with sweeping to minimize dust.

- ☐ oil absorbents

  ☑ **NOTE:** Oil absorbents are used to soak up petroleum product spills such as oil.

- ☐ dustpans

- Shop equipment
  - ☐ handbrooms
  - ☐ dust cloths

- Restroom
  - ☐ toilet bowl brushes
  - ☐ toilet bowl cleaners
  - ☐ mop
  - ☐ mop bucket and wringer
  - ☐ disinfectant detergent
  - ☐ glass cleaner and paper towels for mirrors

OBJECTIVE 10

Optional Activities/
Resources in
Instructor's Guide

State the purposes of the safety color code system.

- Promote safety by designating critical parts and areas
- Increase the life of machines through proper use
- Reduce eyestrain, tension, and fatigue by contrasting the material from the machines and work areas
- Promote better housekeeping by providing a pleasing environment

648

OBJECTIVE 11

Match the colors of the safety color code system to their correct designations.

You will see transparencies showing safety color codes.

Required Activities/
Resources
- Transparency Masters 1 & 2

Optional Activities/
Resources in
Instructor's Guide

FIGURE 31

Color Designations in the Safety Color Code System

Green	Designates noncritical parts of equipment and machined surfaces, nameplates, bearing surfaces, safety and first-aid equipment
Yellow	Designates operating levers, wheels and handles; hazardous areas that may cause stumbling, falling, or tripping; caution
Orange	Designates electrical switches; interior surfaces of doors on fuse and electrical boxes; movable guards and parts; inside of nonmovable guards; traffic lanes and overhead hazards; dangerous parts of equipment that may cut, crush, shock, or otherwise injure
Red	Designates location of fire-fighting equipment; emergency exits; off buttons, or levers for stopping electrical equipment; gasoline cans (with an additional yellow band around the can)
Blue	Designates caution against starting equipment being repaired or using defective equipment **NOTE:** A blue tag should be attached to defective equipment. The tag should read "Out of Order."
Ivory	Designates table edges, vise jaws, and edges of tool rests; used to reflect light and "show the way"
Aluminum	Used for table tops and work areas; provides contrast with work

OBJECTIVE 12

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Match classes of fires to their correct descriptions.

Discuss the need for fire extinguishers in vehicles, shops, and homes.

- **Class A** – Fires that occur in ordinary combustible materials such as wood, rags, and rubbish
- **Class B** – Fires that occur with flammable liquids such as gasoline, oil, grease, paints, and thinners
- **Class C** – Fires that occur in or near electrical equipment such as motors, switchboards, and electrical wiring
- **Class D** – Fires that occur with combustible metals such as magnesium

☑ **NOTE:** The most feasible type of fire extinguisher to have available is the commercial multi-purpose A-B-C extinguisher. Only in very rare cases would one need an extinguisher for Class D fires.

OBJECTIVE 13

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

State general safety precautions for the shop or work area.

Discuss your school's procedures to follow in case of accident or injury.

☑ **NOTE:** Additional safety precautions related to specific areas of instruction will be taught in agricultural mechanics.

- Always wear proper eye protection.
- Keep shop and work area clean and well-organized.
- Put all items in their proper places after use.
- Use tools for their specific purpose only.
- Keep tools and equipment properly adjusted or repaired.
- Know location and proper use of fire extinguishers.
- Make sure that fire extinguishers are properly charged.
- Repair or replace all worn or frayed electrical cords.

- Report to the instructor any tools or equipment needing repair.
- Properly store work materials at end of work period.
- Place oily or greasy rags in covered metal cans.
- Turn off all electrical equipment after use.
- Never touch metal that could be hot.
- Never work with tools or equipment for which you have not received instruction.
- Know and observe local safety procedures given by your instructor.

OBJECTIVE 14

Optional Activities/ Resources in Instructor's Guide

State conditions in which eye protection is needed in agricultural mechanics.

- When working with hot, molten metals or other molten materials
- When milling, sawing, turning, shaping, cutting, grinding, or stamping solid materials
- When kiln firing or tempering any metal or other materials
- When gas or electric arc welding or any other form of welding processes
- When repairing or servicing any vehicle where there is danger of injury to the eyes
- When working with caustic or explosive materials

☑ **NOTE:** Oklahoma state law requires eye protective devices be worn in certain courses of instruction to protect students and teachers.

OBJECTIVE 15

Optional Activities/ Resources in Instructor's Guide

Match agricultural mechanics occupational titles to their correct descriptions.

☑ **NOTE:** Many other specific agricultural mechanics related occupations exist. In many of these occupations, individuals start as helpers and improve their skills for employment advancement.

- electrician's helper – assists electrician in installing and repairing electrical wiring, fixtures, and equipment
- welder – performs all types of tasks related to various types of welding and oxy-gas cutting and heating
- farm machine operator – operates, maintains ,adjusts, and performs minor repairs on all types of tractors and farming equipment
- maintenance mechanic's helper – assists in repairing and maintaining all types of machinery and equipment
- farm equipment mechanic – maintains, repairs, and overhauls all types of farm machinery and equipment; may install and repair plumbing and electrical systems, as well as construct and repair buildings and structures
- farm machinery set-up mechanic – uncrates, erects or assembles, adjusts, and lubricates farm machinery
- small engine mechanic – repairs small gasoline engines for all types of farm equipment
- carpenter's helper – assists carpenter with all types of wood construction; may require use of numerous hand and power tools
- fence builder – erects and repairs metal and wooden fences and gates around industrial establishments, residences, or farms; uses hand and power tools
- surveyor's assistant – assists surveyor in all types of tasks related to land surveying

OBJECTIVE 16 **Complete Assignment Sheet 1.**

OBJECTIVE 17 **Complete Assignment Sheet 2.**

ASSIGNMENT SHEET 1

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY

F1

Name ______________________ Score __________

OBJECTIVE 16 **Analyze case studies to determine ways to prevent accidents.**

INTRODUCTION

A safe work environment can be maintained in any type of shop. Unfortunately, failure to comply with safety rules sometimes results in bodily injury.

INSTRUCTIONS

Study the following picture and case studies. Based on what you have learned, make recommendations to prevent accidents. Be prepared to discuss your recommendations in class.

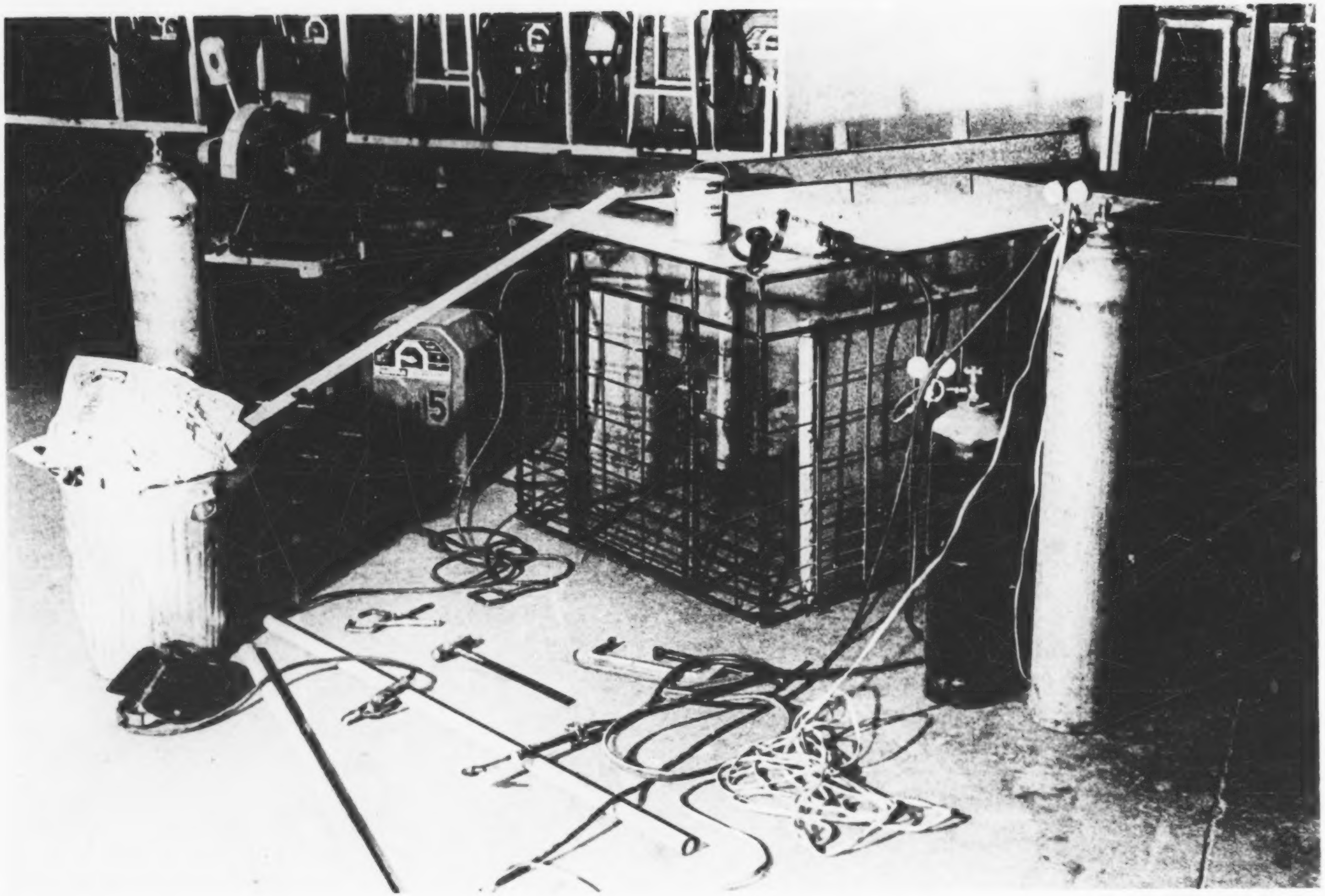
Reading Comprehension
- Analyze cause and effect
- Draw conclusions

Functional Reading
- Follow written instructions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

Cognitive Activities
- Define a problem
- Draw conclusions
- Devise a solution


5

After analyzing the photograph, list the changes that could be made to make this a safe work area.

Case Study 1

Students in your agricultural education class were working in the shop on their arc-welding skills. The previous hour's class had been doing project work. As a result, the right-angle grinder had been left lying on the floor beside a feeder. The grinder was also left plugged in. As one of your classmates walked by the grinder, someone called his name. The student turned and tripped over the cord on the grinder. The student badly scraped his arm on the feeder during the fall. To make matters worse, the student landed on his knee and was gouged by a scrap piece of angle iron left on the floor next to the feeder. The arm required minor attention, but the knee required four stitches.

Analyze this situation. List the things that could have been done to prevent this accident. Do not forget to determine who was responsible on the clean-up crew during the previous class.

Case Study 2

A large class of agricultural education students were working on various shop skills. Some pairs of students were required to share arc-welding booths. While one student at each booth was running beads, the other students chipped slag from welds that they had already completed. Joe and Brian were working close together at a workbench, away from the welding booths, cleaning their welds. Brian is required to wear prescription glasses to do this work. His glasses were normal-looking eyeglasses without side shields.

While both were chipping and brushing their welds. Brian suddenly jumped away from Joe. He pulled off his glasses, bent down, and covered his right eye with his hands. Brian was taken to the hospital's emergency room where it was determined that he had suffered a severe cut to the right side of his eyeball caused by a metal chip.

Analyze this situation and suggest what could have been done to prevent Brian's visit to the emergency room and his three days of suffering and pain.

ASSIGNMENT SHEET 2

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY

F1

Name ______________________________ Score __________

OBJECTIVE 17

Survey agricultural mechanics occupations.

INTRODUCTION

Because virtually all areas of agriculture involve the use of some type of equipment or mechanical device, there are many occupations in this field. Exploring areas of interest can lead to exciting and rewarding careers in agricultural mechanics.

INSTRUCTIONS

Complete the following surveys by interviewing two people. Choose people in two occupations that interest you, and use the following surveys as interview guides.

Language
- Use standard grammar, spelling, and capitalization

Research
- Take notes

Interactive Communications
- Apply questioning techniques
- Conduct/receive interviews

Cognitive Activities
- Collect/record information
- Draw conclusions

Survey 1

Occupational title ____________________

Brief description of the occupation ____________________

Tools and equipment used in the occupation

Specific tasks performed in the occupation

What is the best part of your job?

____

____

____

____

Would you advise your child or other young people to go into your kind of work? Why?

____

____

____

____

What training did you get to prepare you for this job?

____

____

____

____

Where did you get this training?

____

____

____

____

Survey 2

Occupational title

Brief description of the occupation

Tools and equipment used in the occupation

Specific tasks performed in the occupation

What is the best part of your job?

____

____

____

____

Would you advise your child or other young people to go into your kind of work? Why?

____

____

____

____

What training did you get to prepare you for this job?

____

____

____

____

Where did you get this training?

____

____

____

____

OBJECTIVE SHEET

ARC WELDING

F2

INTRODUCTION

The development of electric arc welding paralleled the development of electrical sources. Initially used as a means of repair, it is used widely in manufacturing and construction. Knowledge and skills in arc welding are required in many different occupations including agriculture. Skills in this area can help save money and time by completing repairs to equipment, fences, and buildings and by building needed items.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS	
PREREADING:	From your classroom library, your school library or the public library, find an article about welding careers or welding safety and read it.
WRITING:	Write a one-page essay about how the information in the article could affect you or your classmates.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Job Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Match to their correct descriptions kinds of arc welding machines.
2. Select from a list common pieces of equipment used in arc welding.
3. List types of electrodes.
4. Select from a list the most common sizes of electrodes used in arc welding.
5. Identify characters in the AWS electrode classification system.
6. List the purposes of flux.
7. List methods of establishing an arc.
8. Select from a list characteristics of proper arc length.
9. Label the parts of the welding process.
10. List welding positions.
11. Identify kinds of welds.
12. Identify types of weld joints.
13. Describe the effects of raising and lowering the current setting on arc welding machines.
14. State causes of poor welds.
15. State safety precautions used in arc welding.
16. Start, stop, and run a bead. (Job Sheet 1)
17. Construct a pad. (Job Sheet 2)
18. Construct a butt weld. (Job Sheet 3)

INFORMATION SHEET ARC WELDING F2

OBJECTIVE 1

Optional Activities/ Resources in Instructor's Guide

Match to their correct descriptions kinds of arc welding machines.

WORDS YOU SHOULD KNOW	
arc welding	process of using an electric arc as the source of heat to join two or more pieces of metal by the fusion process

☑ **NOTE:** AC, DC, and AC/DC welding machines are used for stick welding. This type of welding is also referred to as shield metal arc welding or SMAW.

- alternating current (AC) – machine that alternates direction of flow of electric current 120 times per second
- direct current (DC) – machine in which the electric current flows in one direction

  ☑ **NOTE:** DC machines have a manual control that allows the operator to change the direction of current flow. The two possible directions are referred to as straight polarity and reverse polarity.

- alternating/direct current (AC/DC) – machine that is capable of supplying AC or DC current for welding
- Tungsten inert gas (TIG) – machine that may use either AC or DC current; uses an inert shielding gas and a nonconsumable tungsten electrode

  ☑ **NOTE:** TIG welding is commonly referred to as gas tungsten arc welding or GTAW.

- metal inert gas (MIG) – machine that may use AC or DC current; uses an inert shielding gas and a consumable wire electrode that is fed automatically from a spool

  ☑ **NOTE:** MIG welding is commonly referred to as gas metal arc welding or GMAW.

OBJECTIVE 2

Select from a list common pieces of equipment used in arc welding.

Required Activities/
Resources
– Demonstration

Optional Activities/
Resources in
Instructor's Guide

You will watch a demonstration of adjusting a helmet.

- welding machine
- electrode holder with lead
- ground clamp with lead
- helmet

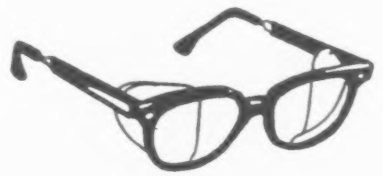
CAUTION: Be sure that the shield or helmet lens is not cracked or broken.

- leather gloves

CAUTION: Never handle hot metal with welding gloves. The heat will cause the leather to harden and will ruin the gloves.

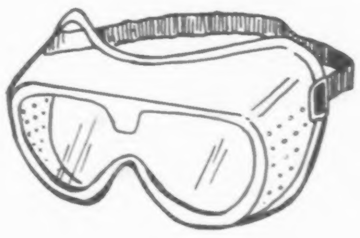
- chipping hammer
- eye protection

FIGURE 1



Safety Glasses

FIGURE 2



Goggles

- wire brush
- electrodes

OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

List types of electrodes.

WORDS YOU SHOULD KNOW	
electrode	metal rod, coated with flux, that conducts a current from the electrode holder to the base metal; sometimes referred to as the rod or stick.

- mild steel
- high-carbon steel
- hard surfacing
- alloys/special-purpose

OBJECTIVE 4

Optional Activities/
Resources in
Instructor's Guide

Select from a list the most common sizes of electrodes used in arc welding.

☑ **NOTE:** Sizes of electrodes range from $^{1}/_{16}$ inch to $^{3}/_{8}$ inch. Electrode size is determined by the diameter of the bare end of the electrode.

- $^{3}/_{32}$ inch
- $^{1}/_{8}$ inch
- $^{5}/_{32}$ inch

OBJECTIVE 5

Required Activities/
Resources
– Transparency Master 3

Identify characters in the AWS electrode classification system.

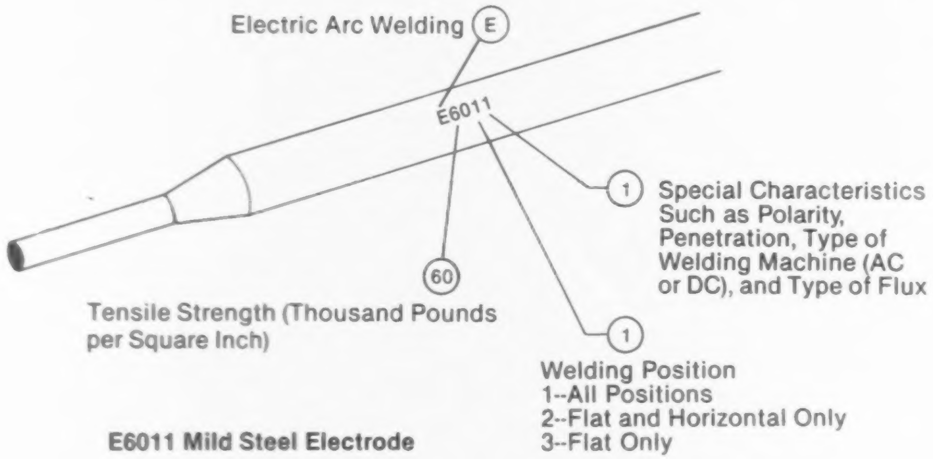
You will see a transparency which demonstrates this classification system.

WORDS YOU SHOULD KNOW	
American Welding Society (AWS)	One of many associations and societies that establish codes and/or standards for the welding industry

- Letter E – denotes that electrode is for electric arc welding
- first two numerals – indicate tensile strength in thousands of pounds per square inch
- third numeral – indicates position to be used
- fourth numeral – gives code for special characteristics of electrode

☑ **NOTE:** For a more thorough explanation of the special characteristics, you should refer to an electrode selection chart or electrode pocket guide.

FIGURE 3


Electric Arc Welding
E
E6011
1
Special Characteristics Such as Polarity, Penetration, Type of Welding Machine (AC or DC), and Type of Flux
60
Tensile Strength (Thousand Pounds per Square Inch)
1
Welding Position
1--All Positions
2--Flat and Horizontal Only
3--Flat Only

E6011 Mild Steel Electrode

OBJECTIVE 6

Optional Activities/
Resources in
Instructor's Guide

List the purposes of flux.

WORDS YOU SHOULD KNOW	
arc	flow of electric current across a narrow gap
flux	chemical coating on electrodes; used to promote fusion of metals during welding
slag	nonmetallic by-product of welding process; made of flux and nonmetallic impurities

- stabilizing arc
- shielding molten puddle from air

  ☑ **NOTE:** As the flux is burned from the arc heat, part of it forms a gaseous cloud that shields the puddle from surrounding air.

- floating impurities out of puddle

  ☑ **NOTE:** Part of the burned or melted flux becomes a liquid part of the molten puddle.

- forming slag, which slows cooling
- increasing speed

OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

List methods of establishing an arc.

- scratching (similar to striking a match)
- tapping

OBJECTIVE 8

Optional Activities/
Resources in
Instructor's Guide

Select from a list characteristics of proper arc length.

- end of electrode is same distance from base metal as diameter of electrode

  EXAMPLE: With a $^1/_8$ inch electrode, the arc length is $^1/_8$ inch.

- steady hum from welding machine and a "frying" sound at the arc.

OBJECTIVE 9

Required Activities/
Resources
– Transparency Master 1

Optional Activities/
Resources in
Instructor's Guide

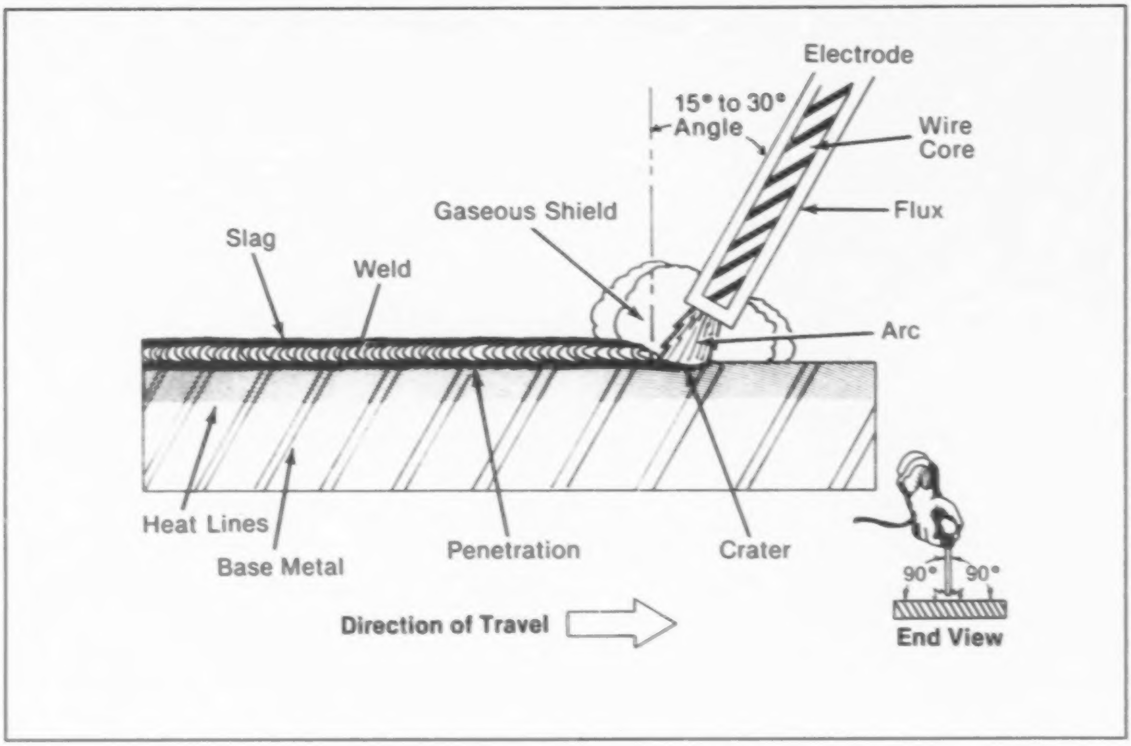
Label the parts of the welding process.

You will see a transparency showing the welding process.

WORDS YOU SHOULD KNOW	
base metal	metal to be welded
crater	depression in the face of a weld, usually at the point where the weld stopped
penetration	extent to which the weld metal combines with the base metal as measured from surface of base metal

☑ **NOTE:** for left-handed welders, the direction of travel would be the opposite of that shown. Also the angle of the electrode would be the same but in the opposite direction.

FIGURE 4


Electrode
15° to 30° Angle
Wire Core
Flux
Gaseous Shield
Slag
Weld
Arc
Heat Lines
Base Metal
Penetration
Crater
90°
90°
End View
Direction of Travel

OBJECTIVE 10

List welding positions.

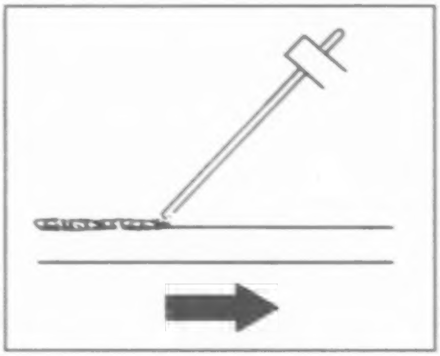
Required Activities/
Resources
– Transparency Master 2

Optional Activities/
Resources in
Instructor's Guide

You will see a transparency showing welding positions.

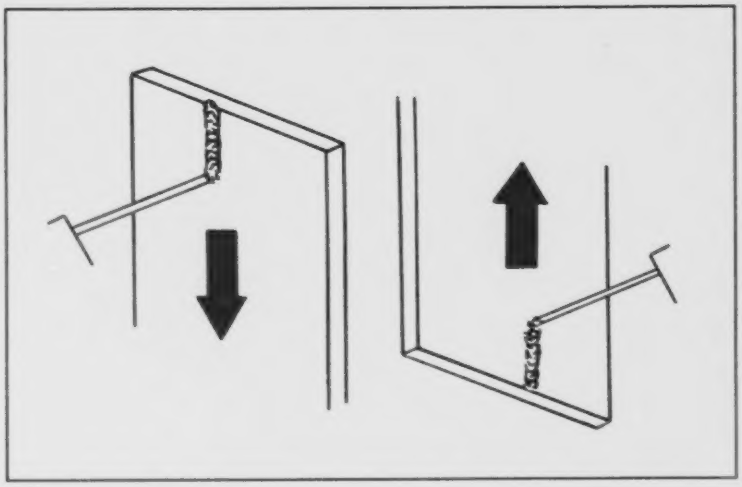
- flat

FIGURE 5



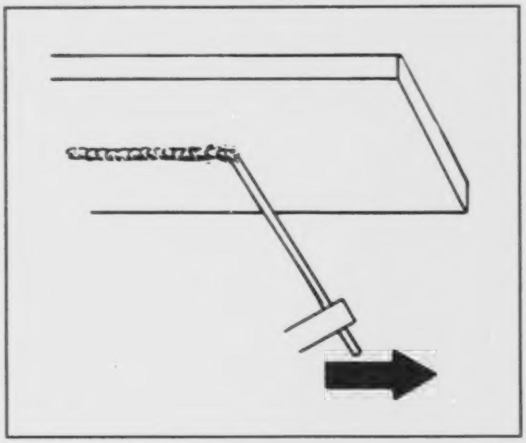
- vertical

FIGURE 6



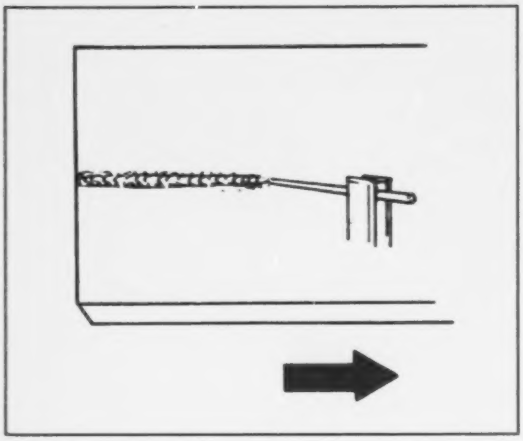
- overhead

FIGURE 7



- horizontal

FIGURE 8



OBJECTIVE 11

Required Activities/
Resources
- Transparency Master 5

Optional Activities/
Resources in
Instructor's Guide

Identify kinds of welds.

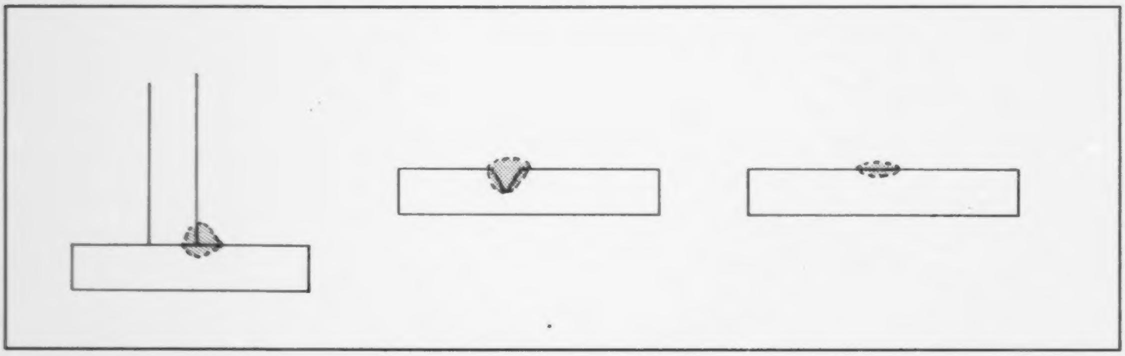
You will see a transparency showing the kinds of welds.

WORDS YOU SHOULD KNOW	
bead weld	weld made by one pass of electrode
tack weld	small weld used to hold base metals together temporarily

- end view

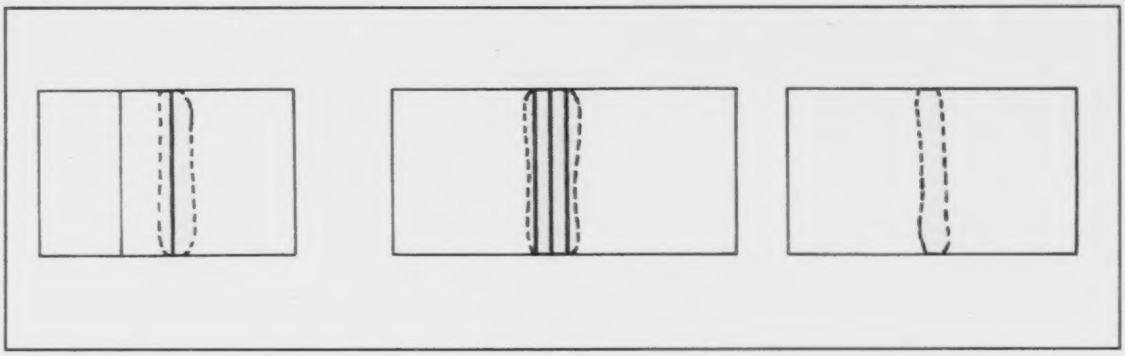
☐ fillet ☐ groove ☐ bead

FIGURE 9



- top view
  - fillet
  - groove
  - bead

FIGURE 10



OBJECTIVE 12

Required Activities/
Resources
– Transparency Master 4

Optional Activities/
Resources in
Instructor's Guide

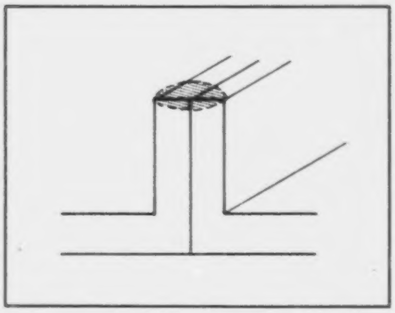
Identify types of weld joints.

You will see a transparency showing the types of weld joints.

WORDS YOU SHOULD KNOW	
butt joint	weld between two metal parts on the same plane

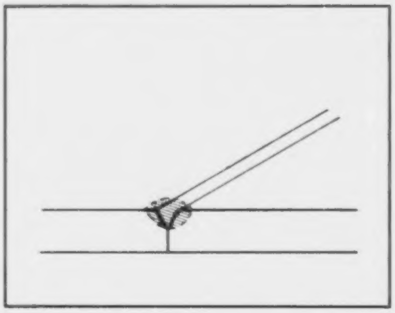
- edge

FIGURE 11



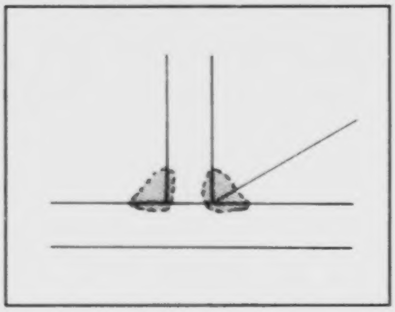
- butt

FIGURE 12



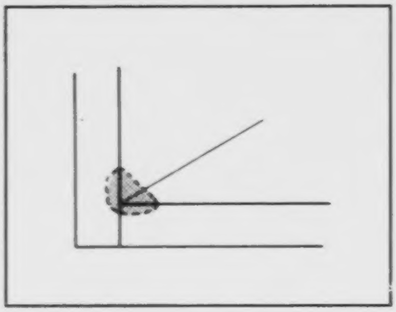
- T

FIGURE 13



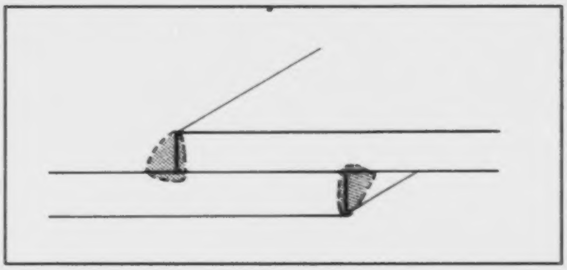
- corner

FIGURE 14



- lap

FIGURE 15



OBJECTIVE 13

Optional Activities/
Resources in
Instructor's Guide

Describe the effects of raising and lowering the current setting on arc welding machines.

- raising current – produces more heat
- lowering current – produces less heat

OBJECTIVE 14

Optional Activities/
Resources in
Instructor's Guide

State causes of poor welds.

- machine adjustment too hot or too cold
- electrode size too large or too small
- improper movement of electrode
- improper angle of electrode

- improper base metal preparation
- arc length too long or too short
- improper speed of travel

OBJECTIVE 15

Optional Activities/
Resources in
Instructor's Guide

State safety precautions used in arc welding.

- Never look at the arc without proper eye protection.
- Always look away from the arc with the naked eye.
- Use a helmet that is in good condition.

  ☑ **NOTE:** Acceptable lens shades for arc welding range from #9 to #12. The larger the number, the darker the lens will be. Magnifying lenses that may benefit some individuals are also available.

  CAUTION: Notify your instructor immediately if the helmet material or shaded lens is cracked or broken.

- Wear suitable clothing to protect all parts of the body.

  EXAMPLE: Long-sleeved shirt of nonsynthetic fiber, leather gloves, pants with cuffs turned down high-topped leather shoes or boots

- Yell "cover" before striking an arc.

  CAUTION: Never strike an arc or weld until you are sure that those in the vicinity are wearing protective eye equipment or will look away from the arc.

- Clear welding area of all combustible or flammable materials.
- Avoid picking up hot metal with the hands or leather gloves; use pliers.
- Weld only in places with good ventilation.
- Always open main switch or unplug machine when checking or working on welding machine.
- Do not leave electrode holder on welding table or in direct contact with grounded metal.

- Be sure that welding cables are not frayed or missing insulation.
- Stand on dry footing when welding.
- Keep welding area clean and free of tools and metals that might cause stumbling or tripping.
- Know and follow local school procedures when dealing with eye injuries or burns.
- Never chip a weld without safety glasses.

OBJECTIVE 16 **Complete Job Sheet 1.**

OBJECTIVE 17 **Complete Job Sheet 2.**

OBJECTIVE 18 **Complete Job Sheet 3.**

JOB SHEET 1

ARC WELDING

F2

Name ______________________________

OBJECTIVE 16

Start, stop, and run a bead.

EQUIPMENT AND SUPPLIES

- Clean piece of metal $^1/_4$ inch to $^3/_8$ inch thick, 4 inches by 4 inches

  ☑ **NOTE:** The metal should be free of rust, paint, oil, or any other substance.

- Welding machine
- Electrode holder and lead
- Ground clamp and lead
- Helmet
- Leather gloves
- E-6011 electrodes, $^1/_8$ inch
- Welding booth or table
- Safety glasses or goggles (OSHA approved)
- Chipping hammer
- Wire brush
- Proper protective clothing

PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/ Development
- Master specific job task/procedure
- Practice good work habits/attitudes

⚠ **CAUTION:** Safety glasses or goggles should be worn at all times in the shop.

	Yes	No
1. Set amperage on the welding machine according to your instructor's recommendations.	____	____
2. Arrange the leads to reach the work area easily.	____	____
3. Attach the ground clamp to the welding booth or table.	____	____
4. Position and adjust the welding helmet for maximum comfort.	____	____

	Yes	No
5. Put on welding gloves.	____	____
6. Position metal, on table or booth for comfort during welding.	____	____
☑ **NOTE:** Right-handed welders should weld from left to right. The opposite is correct for left-handed welders.		
7. Place the bare end of the electrode in the electrode holder.	____	____
8. Turn the welding machine on while holding the electrode holder in one hand.	____	____
9. Lower the helmet and strike an arc 1 inch from edge where bead is to begin.	____	____

FIGURE 1

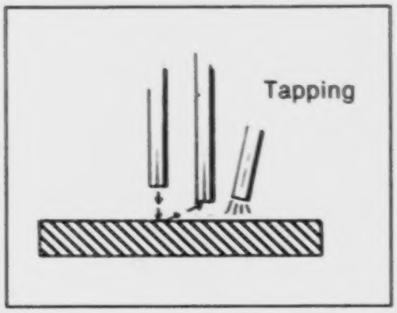
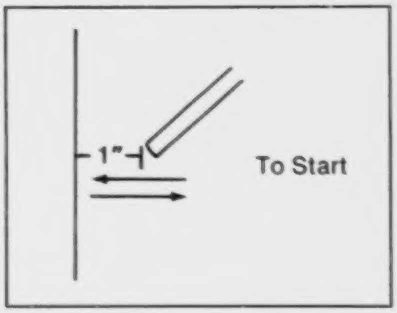


FIGURE 2



	Yes	No
10. When the arc burns brightly, move to the edge, maintaining the correct arc length, and begin forming a puddle.	____	____

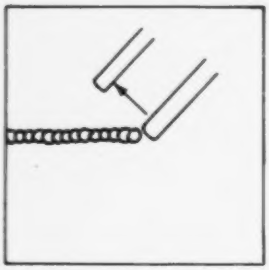
Yes No

11. Weld across the metal 2 inches. ____ ____

12. To stop the bead, move the electrode back through the puddle and lift up. ____ ____

☑ **NOTE:** Moving the electrode back through the puddle prevents cracks from forming in the puddle.

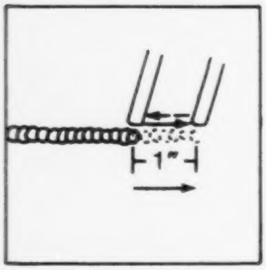
FIGURE 3



To Stop

13. Restart by lowering helmet and striking an arc about 1 inch in front of the crater. ____ ____

FIGURE 4



To Restart

14. When the arc burns brightly, move back through the crater and then resume bead. ____ ____

15. Turn off the welding machine when the bead across the metal is complete. ____ ____

Yes No

16. Use chipping hammer and wire brush to remove slag from the bead. ____ ____

☑ **NOTE:** Show the bead to your instructor for evaluation.

17. Continue to practice running beads. ____ ____

☑ **NOTE:** Concentrate your practice on running straight beads all the way across the pad without stopping. Also concentrate on keeping the beads parallel to each other.

18. Turn off welding machine. ____ ____

19. Clean work area, and return all equipment to its proper place. ____ ____

SKILL TEST RECORD

EVALUATOR'S COMMENTS

____

____

____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Correct electrode angle	4	3	2	1
Correct arc length	4	3	2	1

Correct speed of travel	4	3	2	1
Uniform beads	4	3	2	1
Equipment replaced	4	3	2	1
Work areas cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

4 **Skilled** – Can perform job with no additional training.
3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required.
2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill.
1 **Unskilled** – Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

JOB SHEET 2

ARC WELDING

F2

Name ______________________________

OBJECTIVE 17

Construct a pad.

EQUIPMENT AND SUPPLIES

- Clean piece of metal $^{1}/_{4}$ inch to $^{3}/_{8}$ inch thick, 4 inches by 4 inches

  ☑ **NOTE:** The metal should be free of rust, paint, oil, or any other substance.

- Welding machine
- Electrode holder and lead
- Ground clamp and lead
- Helmet
- Leather gloves
- E-6011 electrodes, $^{1}/_{8}$ inch
- Welding booth or table
- Safety glasses or goggles (OSHA approved)
- Chipping hammer
- Wire brush
- Proper protective clothing

PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/ Development
- Master specific job task/procedure
- Practice good work habits/attitudes

⚠ **CAUTION:** Safety glasses or goggles should be worn at all times in the shop.

Yes No

1. Set the amperage on the welding machine according to instructor's recommendations. ____ ____
2. Arrange the leads to reach the work area easily. ____ ____
3. Attach the ground clamp to the welding booth or table. ____ ____
4. Position and adjust the welding helmet for maximum comfort. ____ ____

Yes No

5. Put on welding gloves. ____ ____

6. Position metal, on table or booth for comfort during welding. ____ ____

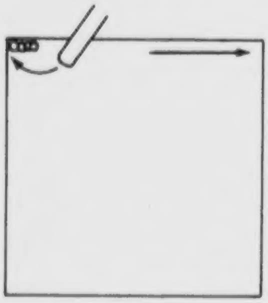
☑ **NOTE:** Right-handed welders should weld from left to right. The opposite is correct for left-handed welders.

7. Place bare end of the electrode in the electrode holder. ____ ____

8. Turn on the welding machine while holding the electrode holder in one hand. ____ ____

9. Lower the helmet and strike an arc at the point to begin the pad. ____ ____

FIGURE 1



10. Lay a straight bead across the plate, using a weaving motion or motion suggested by your instructor. ____ ____

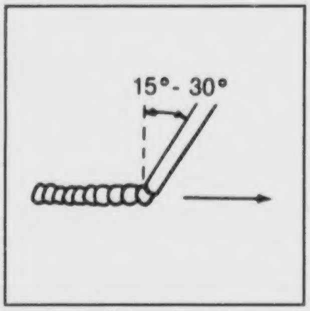
☑ **NOTE:** When using E-6011 electrode, you must use some type of rod manipulation in running a bead.

Yes No

11. Hold the electrode at a 15-degree to 30-degree angle in the direction of travel. Lower the electrode as the rod burns away to maintain correct arc length. ____ ____

☑ **NOTE:** There should be 90 degrees on each side of the electrode.

FIGURE 2



12. Move the electrode steadily across the pad. ____ ____

☑ **NOTE:** Right-handed welders should weld across the pad from left to right. The opposite direction is correct for left-handed welders.

13. Turn the welding machine off after each bead is run unless continued use is planned. ____ ____

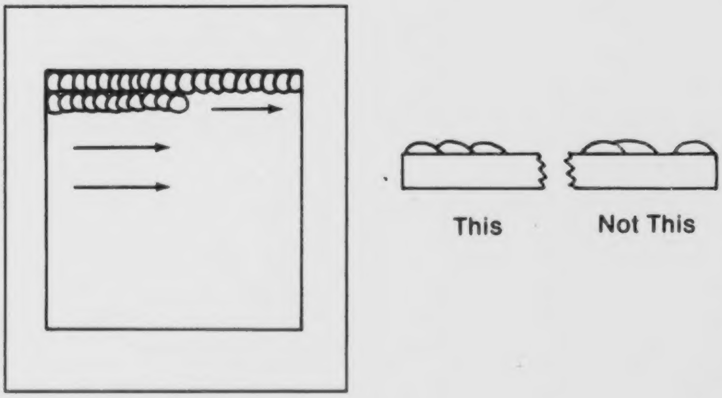
☑ **NOTE:** Lay the electrode holder in a safe position.

14. Use a chipping hammer and wire brush to clean slag from each bead before starting the next bead. ____ ____

Yes No

15. Run beads, overlapping each, until the pad is full. ____ ____

FIGURE 3



16. Turn off the welding machine when the pad is full. ____ ____

☑ **NOTE:** Show the bead to your instructor for evaluation. ____ ____

17. Clean the work area, and return all the equipment to its proper place.

SKILL TEST RECORD

EVALUATOR'S COMMENTS

____

____

____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Correct electrode angle	4	3	2	1
Welds tied together	4	3	2	1
Equipment replaced	4	3	2	1
Work areas cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

4 **Skilled** – Can perform job with no additional training.
3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required.
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1 **Unskilled** – Is familiar with process, but is unable to perform job.

638

EVALUATOR'S COMMENTS

JOB
SHEET 3

ARC WELDING

F2

Name ______________________________

OBJECTIVE 18

Construct a butt weld.

EQUIPMENT AND SUPPLIES

- Clean piece of metal $^{3}/_{16}$ inch to $^{3}/_{8}$ inch thick, 3 inches by 6 inches

  ☑ **NOTE:** The metal should be free of rust, paint, oil, or any other substance.

- Welding machine
- Electrode holder and lead
- Ground clamp and lead
- Helmet
- Leather gloves
- E-6011 electrodes, $^{1}/_{8}$ inch
- Welding booth or table
- Safety glasses or goggles (OSHA approved)
- Chipping hammer
- Wire brush
- Proper protective clothing

PROCEDURE

Functional Reading
- Follow written instructions

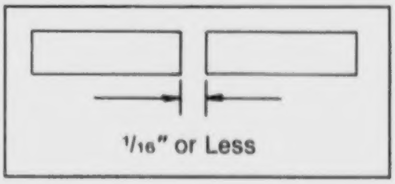
Job Acquisition/ Development
- Master specific job task/procedure
- Practice good work habits/attitudes

⚠ **CAUTION:** Safety glasses or goggles should be worn at all times in the shop.

Yes No

1. Prepare equipment and welding machine for welding. ____ ____
2. Place two pieces of metal parallel to each other, leaving a space of $^{1}/_{16}$ inch maximum between them. ____ ____

FIGURE 1

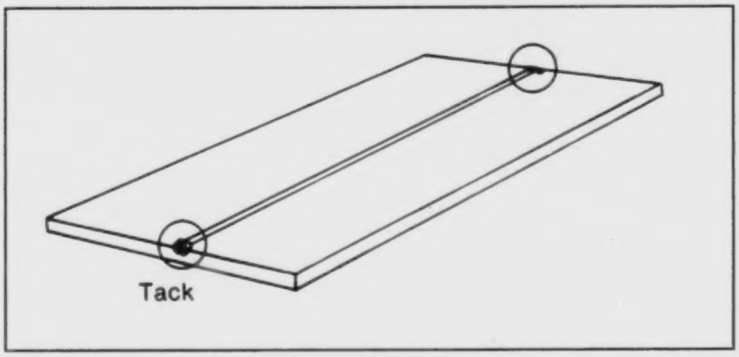


Yes No

3. Tack weld pieces together at both ends. ____ ____

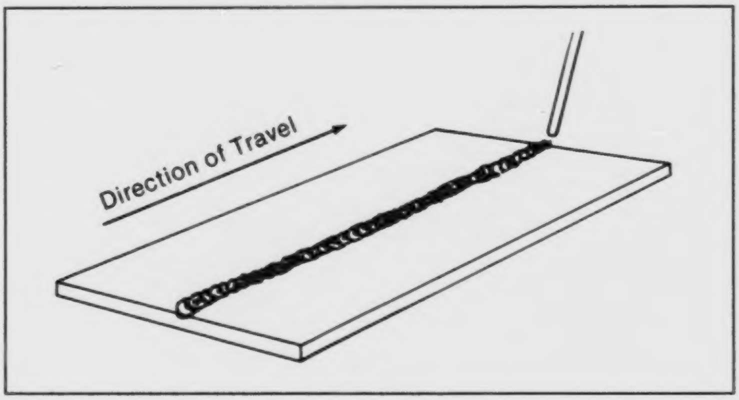
☑ **NOTE:** If the pieces are not tacked, the gap will spread due to heat distortion.

FIGURE 2



4. Complete weld using a single pass. ____ ____

FIGURE 3



	Yes	No
5. Turn off welding machine.	____	____
6. Chip slag and brush the weld.	____	____

☑ **NOTE:** Show your completed butt weld to the instructor for evaluation.

	Yes	No
7. Clean the work area, and return all equipment to its proper place.	____	____

SKILL TEST RECORD

EVALUATOR'S COMMENTS

____

____

____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Uniform beads	4	3	2	1
Correct electrode angle	4	3	2	1
Correct tack weld	4	3	2	1
Welds tied together	4	3	2	1
Equipment replaced	4	3	2	1
Work areas cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

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1 **Unskilled** – Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

OBJECTIVE SHEET

METALWORK

F3

INTRODUCTION

Modern agriculture involves a wide variety of machinery and equipment. Most of this equipment is made up of metal parts. Many exterior structures such as barns and fences are also made of metal parts. Cost savings can be realized if the agricultural producer is able to repair, maintain, and adjust equipment and structures. This knowledge can also help gain employment in other careers.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Go to your classroom library or school library and find a magazine that deals with agricultural mechanics or agriculture or retail hardware. Find an article that deals with agricultural repair or metalworking, such as building metal buildings and read it.
WRITING:	Write a one-page essay about how the information in the article might affect your future.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Assignment and Job Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Label with their appropriate names and specific uses common hand tools used to cut or mark metal.
2. Label with their appropriate names and specific uses hand tools used to measure or size metal.
3. List the common thread classifications.
4. Label common types of taps with their appropriate names and uses.
5. Identify components of a thread-size classification.
6. List the steps for using a tap drill chart to determine correct tap drill size.
7. Select from a list reasons for tap failure.
8. Identify common head types for threaded fasteners.
9. Label common types of metal fasteners with their appropriate names and uses.
10. Identify common grade markings for steel bolts.
11. Identify common types of washers.
12. Identify common types of nuts.
13. List the advantages of riveting with a pop riveter.
14. Use a tap drill chart. (Assignment Sheet)
15. Use a hand hacksaw. (Job Sheet 1)
16. Hand tap a hole in a piece of steel. (Job Sheet 2)
17. Cut with a hand-threading die the threads on a piece of rod. (Job Sheet 3)
18. Use a pop riveter. (Job Sheet 4)

OBJECTIVE 1

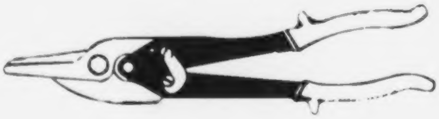
Optional Activities/ Resources in Instructor's Guide

Label with their appropriate names and specific uses common hand tools used to cut or mark metal.

WORDS YOU SHOULD KNOW	
mushroom	enlarged area on head of a chisel; caused by striking chisel with a hammer
tang	pointed end of a file

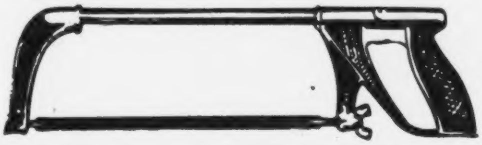
- metal snips – used to cut thin sheet metal, shim stock, or band saw blade material to size or shape

FIGURE 1



- hand hacksaw – used to saw metal parts to size or shape by hand

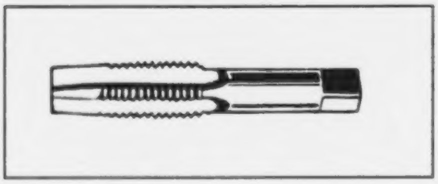
FIGURE 2



- tap – used to produce internal threads in a hole that has been drilled to a specific size or to recondition damaged threads

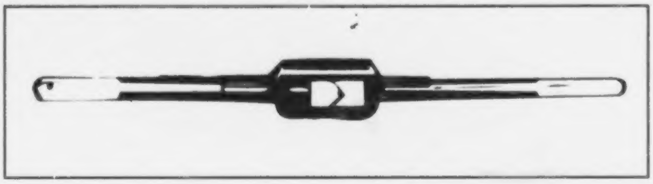
  ☑ **NOTE:** Taps have different shaped points and numbers of flutes (rows of cutting teeth), depending on their application. Taper, plug, and bottoming taps are the most common types. Taps are also available in metric sizes.

FIGURE 3



- tap wrench – used to drive taps, hand reamers, and screw extractors of larger sizes $^3/_8$ inch and up

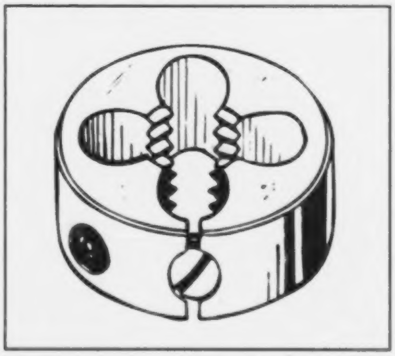
FIGURE 4



- adjustable threading die – used to produce external threads by hand on stock of a particular size; mounted on a die stock that holds and turns threading die; also used to recondition damaged threads

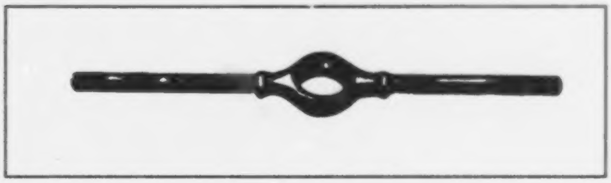
  ☑ **NOTE:** One side of this die has a taper, which is placed on the part to be threaded. Dies are also available in metric sizes.

FIGURE 5



- die stock – used to hold round threading dies when cutting threads by hand

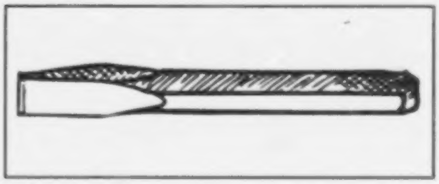
FIGURE 6



- cold chisel – used to chip flat surfaces and to cut thin sheet metal

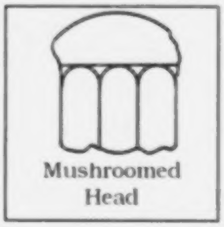
☑ **NOTE:** Cape, roundnose, and diamond-point are the names of chisels with other shapes. These are used to cut grooves, keyways, and small slots.

FIGURE 7



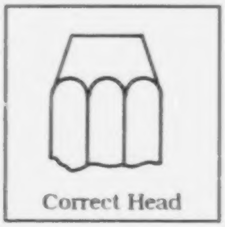
☑ **NOTE:** Never use a chisel with a mushroomed head because the mushroom can chip off and cause injury. Grind the head smooth.

FIGURE 8



Mushroomed Head

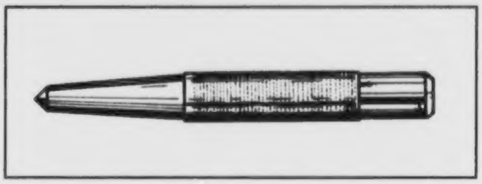
FIGURE 9



Correct Head

- center punch – used to mark the location of a hole prior to drilling by making a dent in the surface of the material

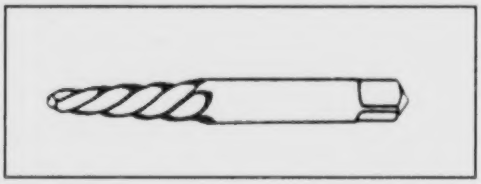
FIGURE 10



- screw extractor (easy-out) – used to remove bolts and screws whose heads have been broken off or damaged

  ☑ **NOTE:** Screw extractors are available in a variety of sizes. Some larger sizes can be used to remove broken pipe.

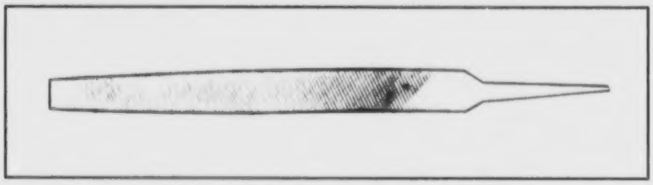
FIGURE 11



- file – used to smooth, shape, or remove sharp edges from material in metalwork

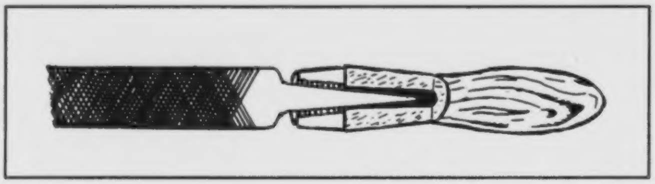
  ☑ **NOTE:** Files are available in a variety of arrangements of tooth sizes and file shapes. Some of the more commonly used shapes are flat, round, half-round, and triangular.

FIGURE 12



☑ **NOTE:** Never use a file unless it is equipped with a handle to prevent possible stab wounds from the spearlike point (tang).

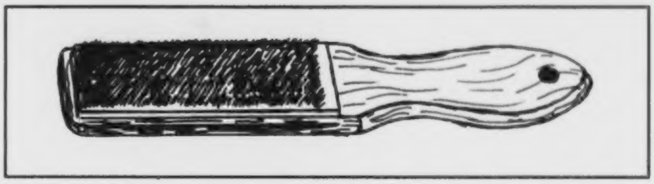
FIGURE 13



- file card – used to clean a file

☑ **NOTE:** Some file cards have short wire bristles on one side for cleaning hard, embedded particles from a file, and a brush on the other side to finish cleaning.

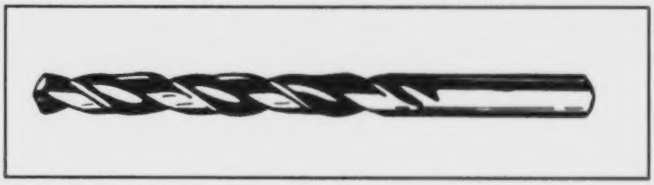
FIGURE 14



- twist drill (drill bit) – used to drill holes in metal with either a power hand drill motor, electric or air, or a drill press

☑ **NOTE**: Twist drills come in a variety of types, such as the straight shank shown as well as taper.

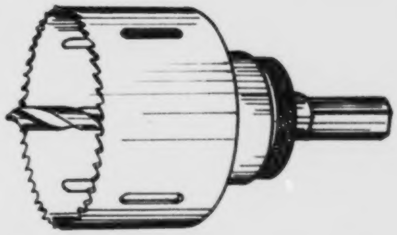
FIGURE 15



- hole saw – used to cut holes in metal when a hole larger than that made by available twist drills is needed

  ☑ **NOTE:** Hole saws may be purchased in a variety of sizes for both wood and metal. If saws are purchased for metal, they can also be used for wood. However, the opposite is not true. Hole saws are equipped with a twist drill to form the pilot hole and are designed to be used in a power hand drill or drill press.

FIGURE 16



OBJECTIVE 2

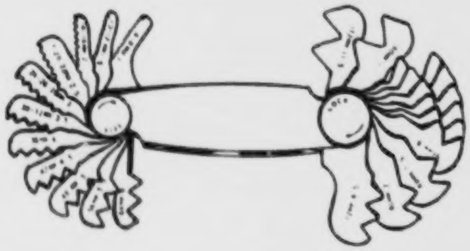
Optional Activities/
Resources in
Instructor's Guide

Label with their appropriate names and specific uses hand tools used to measure or size metal.

- screw-pitch gauge – used to determine pitch, size, and number of various threads

  ☑ **NOTE:** Screw-pitch gauges are available for both customary and metric threads.

FIGURE 17



- firm-joint hermaphrodite caliper – used to lay out plans from a reference surface; must be set with a scale

FIGURE 18

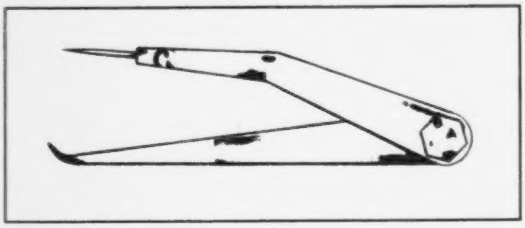
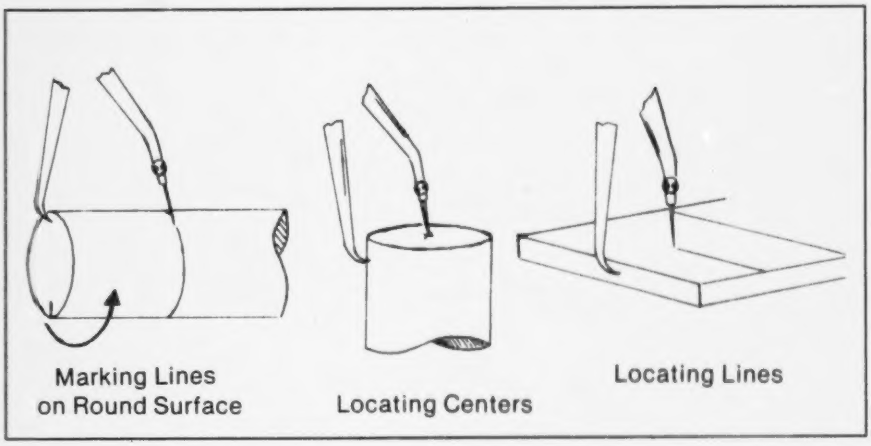


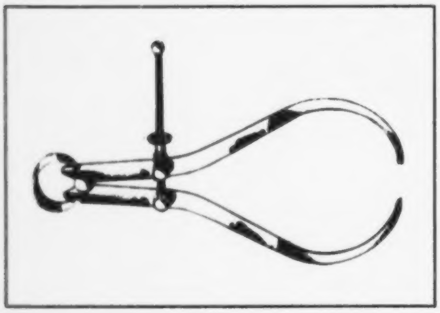
FIGURE 19


Marking Lines on Round Surface
Locating Centers
Locating Lines

- outside caliper – used to measure outside diameters and width of slots

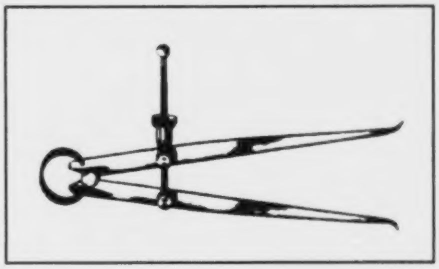
  ☑ **NOTE:** Measurements are transferred to a steel rule or other measuring tool for reading the size. Both inside and outside calipers may be preset to determine when a diameter is getting close to size.

FIGURE 20



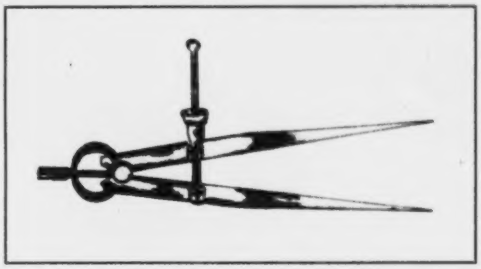
- inside caliper – used to measure inside diameters and widths of slots

FIGURE 21



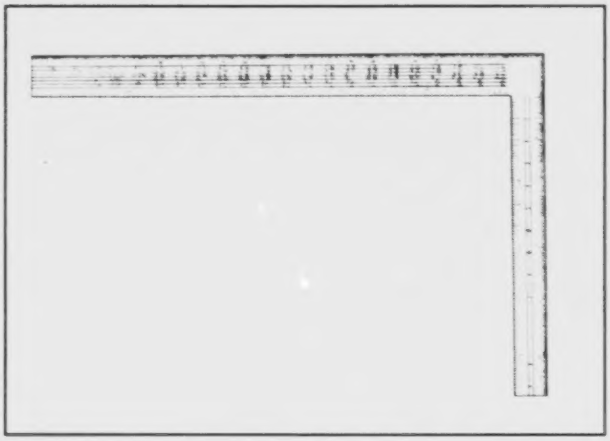
- divider – used to lay out circles and arcs, to measure distance between points, and to transfer a measurement directly from a steel rule

FIGURE 22



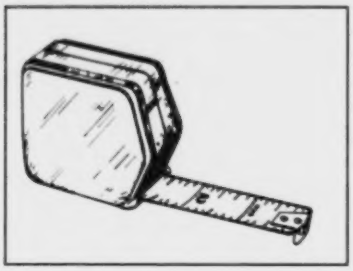
- framing square – used to provide a straight edge, to measure, and to square

FIGURE 23



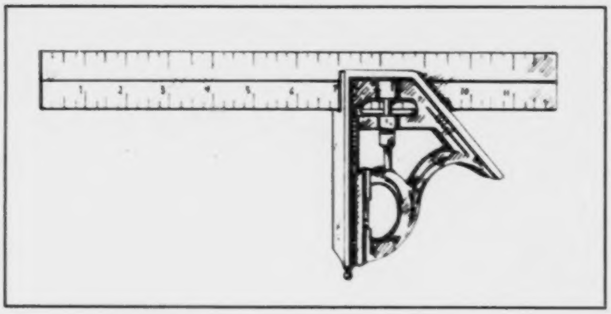
- steel tape – used to measure lengths

FIGURE 24



- combination square – used to provide a straight edge, to level, to measure, and to square

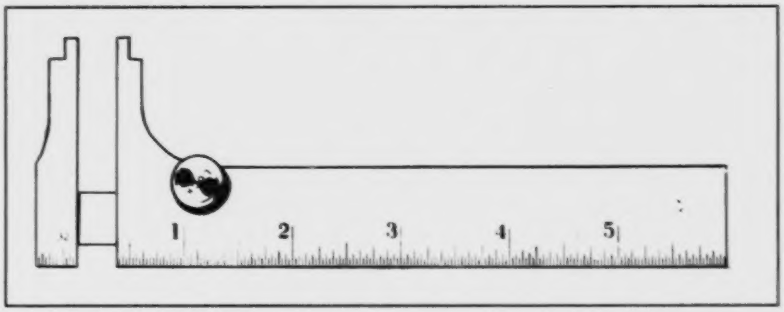
FIGURE 25



- pocket slide caliper – used to make accurate outside and inside measurements

☑ **NOTE:** Many other types of precision calipers and measuring devices are available, but those are primarily designed for precision machinist work.

FIGURE 26



OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

List the common thread classifications.

☑ **NOTE:** Numerous other thread classifications exist, and threads come in metric sizes.

FIGURE 27

- National coarse (NC)

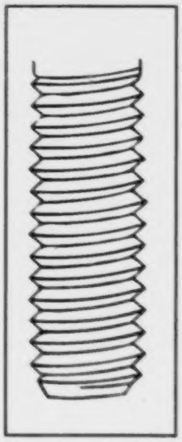
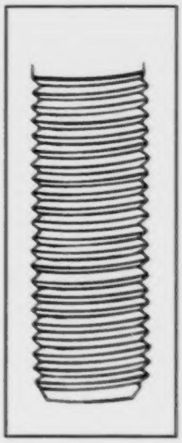


FIGURE 28

- National fine (NF)



OBJECTIVE 4

Required Activities/
Resources
- Transparency Master 1

Optional Activities/
Resources in
Instructor's Guide

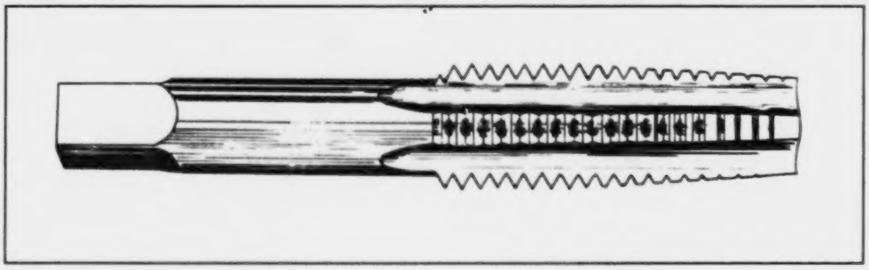
Label common types of taps with their appropriate names and uses.

You will see a transparency showing different types of taps.

☑ **NOTE:** Prior to cutting threads with a tap, drill a pilot hole, using a specific tap drill size determined by the major diameter of the bolt.

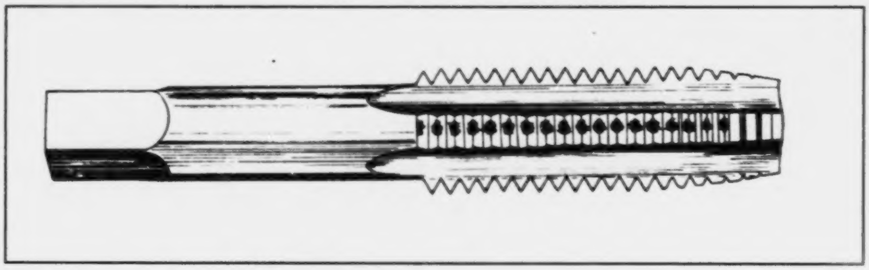
- taper tap – used to make threads in a hole that goes all the way through a piece of metal.

FIGURE 29



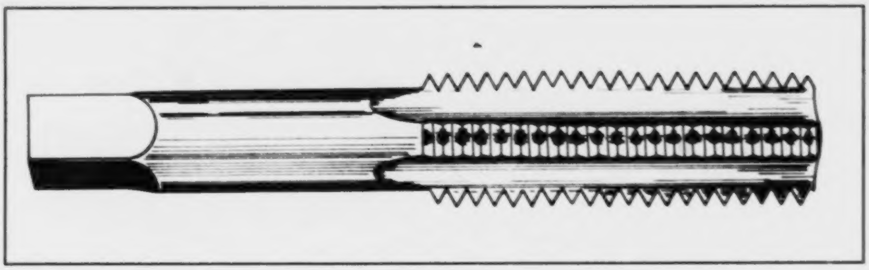
- plug tap – used after a taper tap to cut threads to the bottom of a closed hole

FIGURE 30



- bottoming tap – used after taper and plug taps, respectively, to complete threads in the bottom of a closed hole

FIGURE 31



OBJECTIVE 5

Required Activities/
Resources
– Transparency Master 2

Optional Activities/
Resources in
Instructor's Guide

Identify components of a thread-size classification.

You will see a transparency showing thread-size classifications of taps.

☑ **NOTE:** All taps and dies have thread-size classifications stamped on them.

- first number – indicates the diameter of the bolt

  EXAMPLE: **6** - 32NC
  diameter is 6

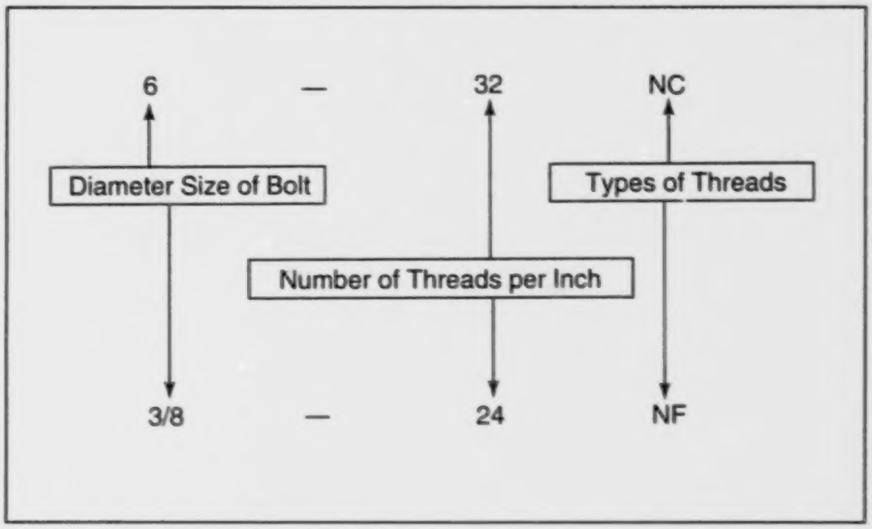
- number immediately before letters – indicates the number of threads per inch

  EXAMPLE: 6 - **32**NC
  32 threads per inch

- letters – indicate the type of threads

  EXAMPLE: 6 - 32**NC**
  NC means national coarse threads

FIGURE 32



OBJECTIVE 6

Optional Activities/ Resources in Instructor's Guide

List the steps for using a tap drill chart to determine correct tap drill size.

☑ **NOTE:** Tap drills are sized by numbers, fractions, letters, or decimal equivalents. It is very important that you determine and use the correct tap drill size. If you drill too large a hole, the thread will be shallow and, therefore, very weak. If the hole is drilled too small, you will probably break the tap.

1. Locate the thread designation (size and thread) on the chart.

2. Move to the right on the chart to locate the corresponding tap drill size.

3. If the number or letter drills are not available, use the tap drill having the closest decimal equivalent to the number or letter drill required.

   EXAMPLE: You determine that you need a tap drill size 3 (0.213), but the number 3 drill is broken. Find on the chart the decimal closest to 0.213. You would use tap drill size 7 (0.201).

TABLE 1

COMMON CUSTOMARY THREADS
WITH TAP DRILL SIZES

National Fine		National Coarse	
Size and Thread	Tap Drill	Size and Thread	Tap Drill
4 - 48	#42 (0.094)	4 - 40	#43 (0.089)
5 - 44	37 (0.104)	5 - 40	38 (0.102)
6 - 40	33 (0.113)	6 - 32	36 (0.107)
8 - 36	29 (0.136)	8 - 32	29 (0.136)
10 - 32	21 (0.159)	10 - 24	25 (0.150)
1/4 - 28	3 (0.213)	1/4 - 20	7 (0.201)
5/16 - 24	"I" (0.272)	5/16 - 18	"F" (0.257)
3/8 - 24	"Q" (0.332)	3/8 - 16	5/16 (0.313)
7/16 - 20	25/64 (0.391)	7/16 - 14	"U" (0.368)
1/2 - 20	29/64 (0.453)	1/2 - 13	27/64 (0.422)

OBJECTIVE 7

Optional Activities/
Resources in
Instructor's Guide

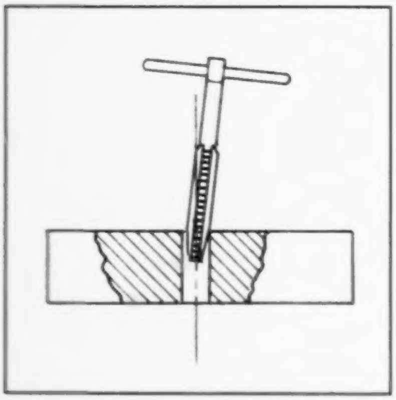
Select from a list reasons for tap failure.

☑ **NOTE:** Taps come in a variety of shapes and numbers of rows of flutes, making correct tap selection very important.

- hole drilled too small
- tap not straight with hole

  ☑ **NOTE:** A tap that is not straight with the hole will bind.

FIGURE 33



- use of dull tap
- not using cutting fluid
- not backing up and breaking the chip
- not reversing direction of tap once point has reached the bottom of the hole

  ☑ **NOTE:** The result would be chip buildup.

- use of a too large tap wrench

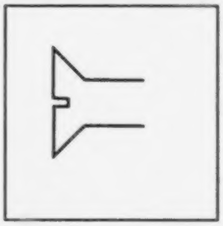
  ☑ **NOTE:** Using a too large tap wrench will not let you feel how much torque your are applying.

OBJECTIVE 8
Optional Activities/
Resources in
Instructor's Guide

Identify common head types for threaded fasteners.

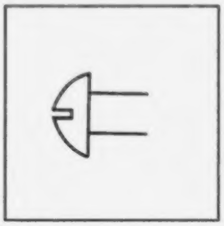
- flat

FIGURE 34



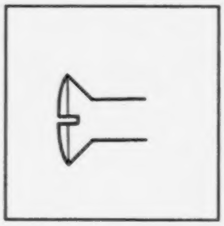
- round

FIGURE 35



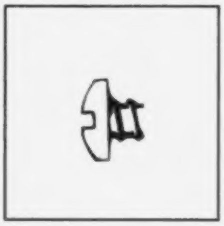
- oval

FIGURE 36



- pan

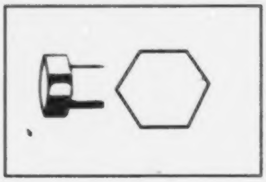
FIGURE 37



☑ **NOTE:** Many of the types of fasteners previously listed can be obtained in Phillips heads as well as slotted heads.

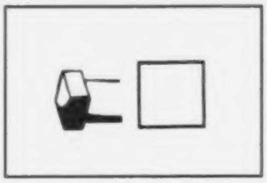
- hex

FIGURE 38



- square

FIGURE 39



OBJECTIVE 9

Optional Activities/
Resources in
Instructor's Guide

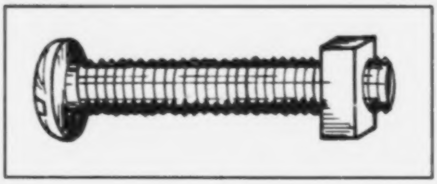
Label common types of metal fasteners with their appropriate names and uses.

☑ **NOTE:** Metal fasteners are available in a variety of head shapes such as round, flat, oval, or hex and with Phillips, slotted, star, or torx heads.

- machine screw – used for assembling small mechanical and electrical products

  ☑ **NOTE:** Machine screws are available with round, flat, or oval heads, and with slotted or Phillips heads. Nuts are not furnished although square or hexagonal nuts are available. Machine screws may have national coarse (NC) or national fine (NF) threads, with diameters of $^{1}/_{4}$ inch, $^{5}/_{16}$ inch, $^{3}/_{8}$ inch, and $^{1}/_{2}$ inch. For screws under $^{1}/_{4}$ inch in diameter, the size is designated by numbers 2 through 12 and the number of threads per inch.

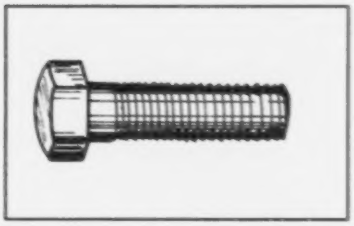
FIGURE 40



- cap screw – used to hold together two pieces of machinery

  ☑ **NOTE:** Cap screws are made in diameters of $^{1}/_{4}$ inch to 1 inch and come in lengths from $^{1}/_{2}$ inch to 6 inches. They come in many different head styles, and they are similar to machine bolts except that they have a more accurately machined surface. Except on the smaller sizes, the thread covers only a part of their length. The screw in use is passed through an unthreaded hole in one piece and screwed into a tapped hole in the second piece.

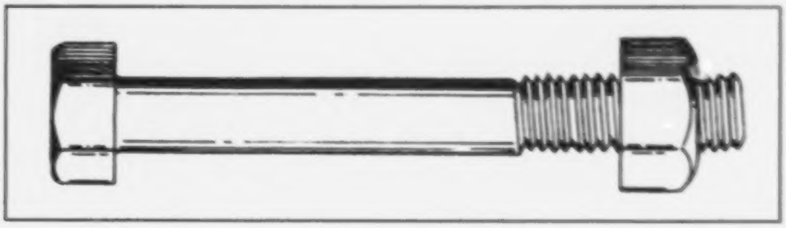
FIGURE 41



- machine bolt – used to fasten together metal parts when a protruding head (one that sticks out) is not objectionable

  ☑ **NOTE:** Machine bolts are made in diameters from $^{1}/_{4}$ inch to over 1 inch and in lengths from $^{1}/_{2}$ inch to over 30 inches. The bolts have either national coarse (NC) or national fine (NF) threads with square or hexagonal head shapes and nuts of the same shape.

FIGURE 42



- setscrew – used to hold together two parts to prevent one part from moving or turning

  NOTE: Setscrews may be used to hold a pulley on a shaft. They come in a variety of head and point shapes.

FIGURE 43

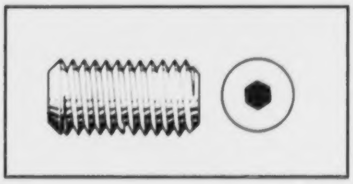
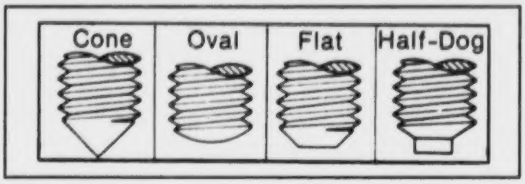


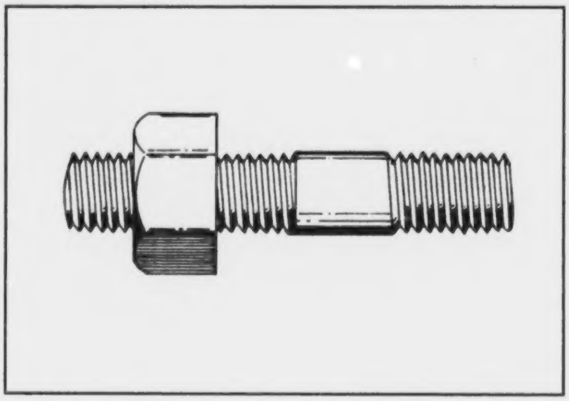
FIGURE 44



- stud – used as a headless fastener that may be screwed into a threaded hole or may have a nut screwed onto either or both ends

  NOTE: The threaded parts of a stud may have different diameters, and the unthreaded part may come in a variety of shapes and sizes.

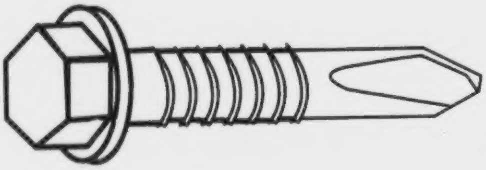
FIGURE 45



- self-tapping screw – used to fasten together sheet metal when no hole is present.

  ☑ **NOTE:** The tip looks like a small drill bit and makes its own pilot hole. It is used in the construction of metal buildings.

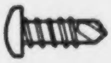
FIGURE 46



- sheet metal screw – used to fasten together metal parts when the parts are not tapped with threads

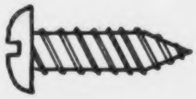
  ☑ **NOTE:** Sheet metal screws come with a variety of heads in a variety of sizes. There are basically two types of points, blunt and sharp. For those screws that require a pilot hole, the hole should be no larger than the smallest diameter of the screw.

FIGURE 47



Blunt Point

FIGURE 48



Sharp Point

OBJECTIVE 10

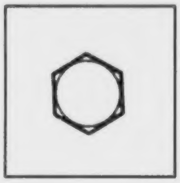
Optional Activities/
Resources in
Instructor's Guide

Identify common grade markings for steel bolts.

NOTE: Listed below are the three most common grade markings for bolts. Always replace bad bolts with the same grade. The higher the grade number, the higher the carbon content and strength of the bolt. Proper bolt grade replacement ensures proper machine or equipment operation.

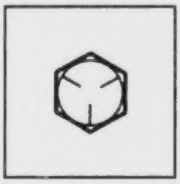
- Grade 2

FIGURE 49



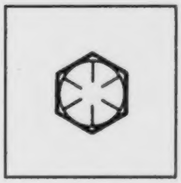
- Grade 5

FIGURE 50



- Grade 8

FIGURE 51



OBJECTIVE 11

Required Activities/
Resources
- Transparency Master 3

Optional Activities/
Resources in
Instructor's Guide

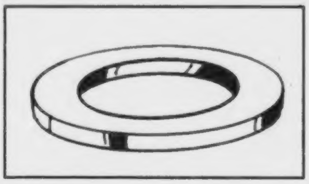
Identify common types of washers.

You will see a transparency showing types of washers.

NOTE: Washers either protect metal surfaces or lock to help prevent a fastener from becoming loose.

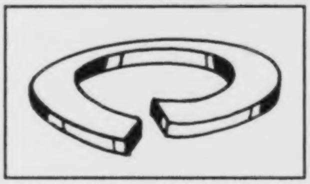
- plain flat

FIGURE 52



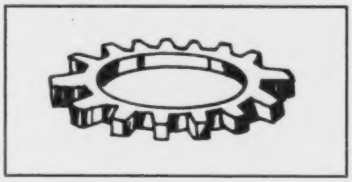
- common lock

FIGURE 53



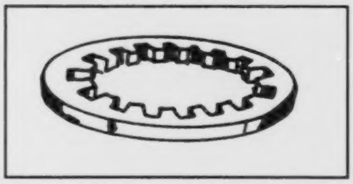
- external lock

FIGURE 54



- internal lock

FIGURE 55



OBJECTIVE 12

Required Activities/
Resources
- Transparency Master 4

Optional Activities/
Resources in
Instructor's Guide

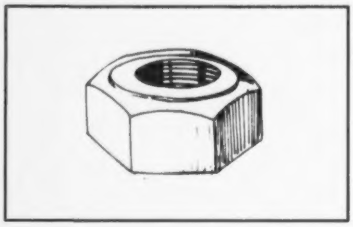
Identify common types of nuts.

You will see a transparency showing types of nuts.

☑ **NOTE:** Nuts may be used with any of the types of screws or bolts previously mentioned except setscrews and sheet metal screws.

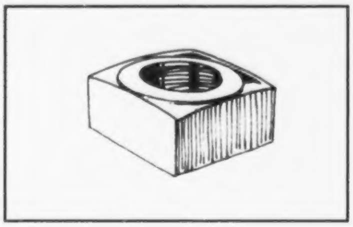
- hexagon

FIGURE 56



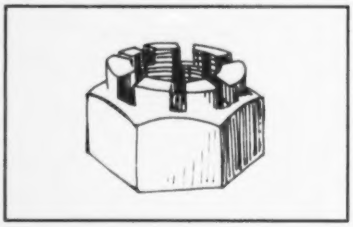
- square

FIGURE 57



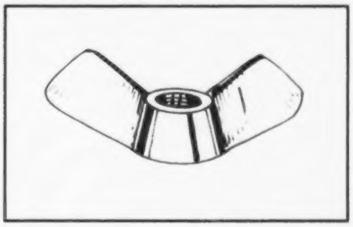
- castle

FIGURE 58



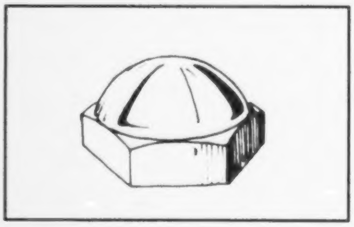
- wing

FIGURE 59



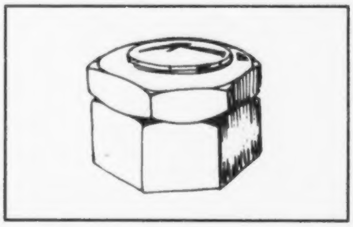
- acorn or cap

FIGURE 60



- jam or lock

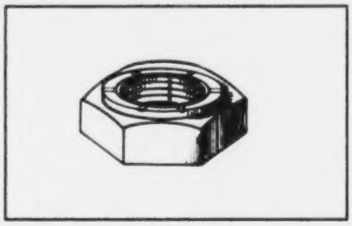
FIGURE 61



- self-locking

  ☑ **NOTE:** Many types of self-locking nuts exist, the most common being the plastic-insert nut. This type contains a relatively soft collar of unthreaded material built into the head. The collar may consist of suitable fibrous material or of a plastic such as nylon.

FIGURE 62



OBJECTIVE 13

Optional Activities/
Resources in
Instructor's Guide

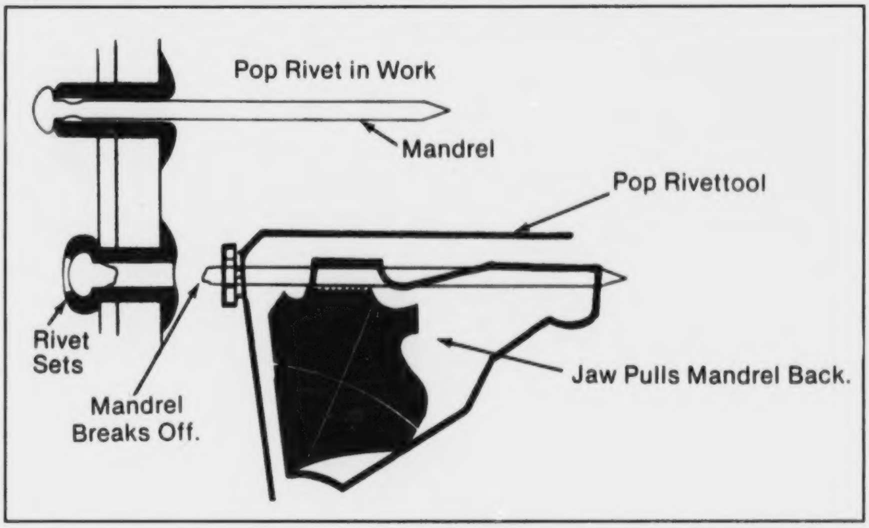
List the advantages of riveting with a pop riveter.

☑ **NOTE:** Because of the simplicity, speed of use, and low cost of pop riveting, it has become increasingly popular in a number of areas of agricultural mechanics. Both aluminum and steel rivets are available and are most commonly used for fastening thin materials.

- easy
- fast
- inexpensive
- convenient in tight places
- reasonably permanent and trouble free
- available in a variety of diameter sizes and lengths

- neat finished product

FIGURE 63


Pop Rivet in Work
Mandrel
Pop Rivettool
Rivet Sets
Jaw Pulls Mandrel Back.
Mandrel Breaks Off.

Used with permission of Bennett Publishing from *Metalwork: S I Metric Edition*, by John L. Feirer and John R. Lindbeck, 1979.

☑ **NOTE:** The mandrel, which is inside the rivet, has a head somewhat like a nailhead. As the tool jaws pull on the shank of the mandrel, the head of the mandrel spreads the rivet, clinching the rivet and breaking the mandrel loose.

OBJECTIVE 14 **Complete the Assignment Sheet.**

OBJECTIVE 15 **Complete Job Sheet 1.**

OBJECTIVE 16 **Complete Job Sheet 2.**

OBJECTIVE 17 **Complete Job Sheet 3.**

OBJECTIVE 18 **Complete Job Sheet 4.**

ASSIGNMENT SHEET

METALWORK

F3

Name ______________________________ Score __________

OBJECTIVE 14 **Use a tap drill chart.**

INSTRUCTIONS Use the tap drill chart to determine the proper tap drill size for the thread designations listed.

Functional Reading
- Interpret forms and records
- Follow written instructions

Cognitive Activities
- Draw conclusions

COMMON CUSTOMARY THREADS
WITH TAP DRILL SIZES

National Fine		National Coarse	
Size and Thread	**Tap Drill**	**Size and Thread**	**Tap Drill**
4 - 48	#42 (0.094)	4 - 40	#43 (0.089)
5 - 44	37 (0.104)	5 - 40	38 (0.102)
6 - 40	33 (0.113)	6 - 32	36 (0.107)
8 - 36	29 (0.136)	8 - 32	29 (0.136)
10 - 32	21 (0.159)	10 - 24	25 (0.150)
1/4 - 28	3 (0.213)	1/4 - 20	7 (0.201)
5/16 - 24	"I" (0.272)	5/16 - 18	"F" (0.257)
3/8 - 24	"Q" (0.332)	3/8 - 16	5/16 (0.313)
7/16 - 20	25/64 (0.391)	7/16 - 14	"U" (0.368)
1/2 - 20	29/64 (0.453)	1/2 - 13	27/64 (0.422)

3/8 - 16NC 1. ____________________ ____________________

8 - 36NF 2. ____________________ ____________________

7/16 - 14NC 3. ____________________ ____________________

7/16 - 20NF 4. ____________________ ____________________

3/8 -24NF 5. ____________________ ____________________

6. What should be done if a "U" tap drill is needed but is not available. Write your answer on the blanks provided.

JOB SHEET 1

METALWORK

F3

Name ______________________________

OBJECTIVE 15

Use a hand hacksaw.

EQUIPMENT AND SUPPLIES

- Steel rule, 6-inch or 12-inch
- Bench vise with soft jaws
- Hand hacksaw
- Soapstone
- Flat steel strap, $^3/_8$ inch by 2 inches
- File with handle
- Square
- File card

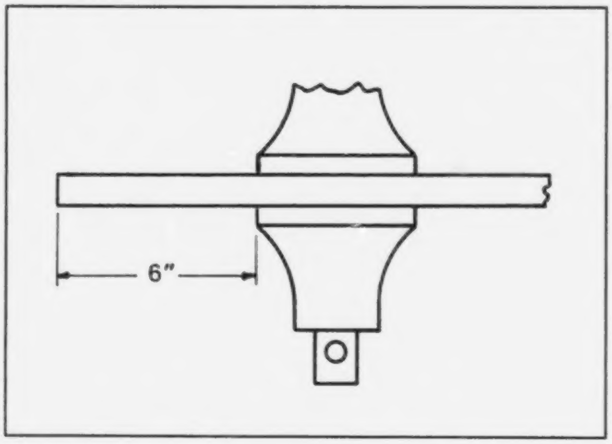
PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/ Development
- Master specific job task/procedure
- Practice good work habits/attitudes

	Yes	No
1. Clamp flat strap in bench vise so that about 6 inches extend past the edge of the vise.	____	____

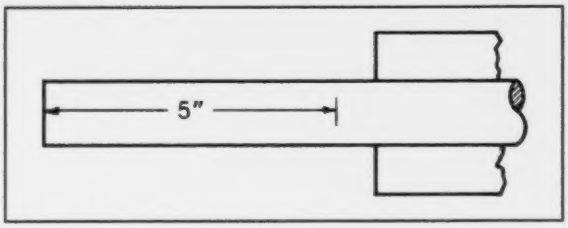
FIGURE 1



Yes No

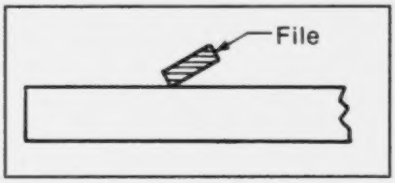
2. Use steel rule to mark a 5-inch length with sharp soapstone. ___ ___

FIGURE 2



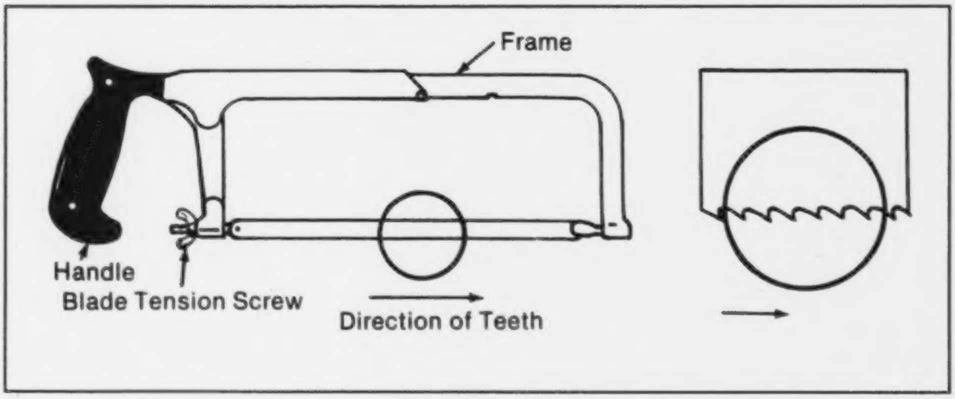
3. Use file to make a V-groove on the 5-inch mark. ___ ___

FIGURE 3



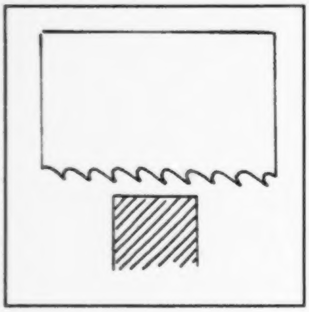
4. Check hacksaw to make sure that the blade is tight, teeth are sharp, and the teeth are going the correct direction. ___ ___

FIGURE 4


Frame
Handle
Blade Tension Screw
Direction of Teeth

☑ **NOTE:** For most general purpose work, use a blade that has twelve teeth per inch. However, a fine-tooth blade should be used to cut thin stock. Keep in mind the three-tooth rule, that at least three teeth should be in contact with the work, when selecting saw blades.

FIGURE 5



	Yes	No
5. Place the saw blade in V-groove.	____	____
6. Hold the saw firmly by the handle and front of the frame.	____	____
7. Start a back-and-forth movement of the saw, applying pressure on the forward strokes and lifting the saw slightly in the return strokes.	____	____
☑ **NOTE:** Use the entire length of the blade when cutting		
8. Cut at an approximate rate of forty strokes per minute.	____	____

⚠ CAUTION: When the saw is about to cut through the stock, ease up on the pressure. Otherwise, you may push your hand onto the sharp edge of the stock still held in the vise.

	Yes	No
9. File off burrs from the cut ends.	____	____
10. Clean the work area and put away the equipment and materials.	____	____

☑ **NOTE:** Keep filed metal strap for future use.

SKILL TEST RECORD

EVALUATOR'S COMMENTS

____

____

____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Handled saw correctly	4	3	2	1
Strap cut correctly	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

4 **Skilled** – Can perform job with no additional training.
3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required.
2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill.
1 **Unskilled** – Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

____

____

____

JOB SHEET 2

METALWORK

F3

Name ______________________________

OBJECTIVE 16

Hand tap a hole in a piece of steel.

EQUIPMENT AND SUPPLIES

- Bench vise
- Piece of steel $^3/_8$ inch by 2-inch flat strap from Job Sheet 1
- Center punch
- Ball-peen hammer
- Hand power drill or drill press
- Twist drill
- Square
- Tap
- Tap wrench
- Cutting fluid
- Tap drill chart
- Bolt with same threads as hole to be tapped

PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/Development
- Master specific job task/procedure
- Practice good work habits/attitudes

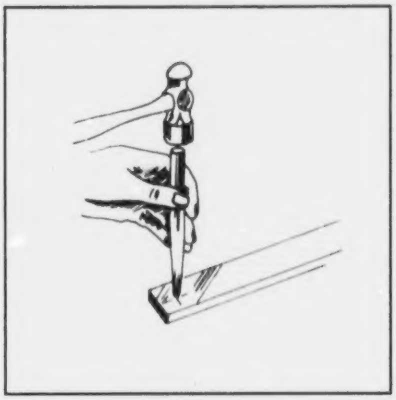
Yes No

1. Determine the size of the thread from the information given by the instructor. ___ ___
2. Check the proper tap drill size on the drill chart. ___ ___
3. Mount the piece of steel in the vise. ___ ___
4. Mark the location of the center of the hole in the middle of the strap, approximately one inch from the end. ___ ___

Yes No

5. Use the center punch to make a starting hole. ____ ____

FIGURE 1



6. Select the proper size twist drill for the hole to be tapped. ____ ____

☑ **NOTE:** Refer to the tap drill chart.

7. Insert the twist drill into the chuck of the drill press or hand power drill and tighten. ____ ____

8. Clamp the material to be drilled. ____ ____

☑ **NOTE:** Ask the instructor about the type of equipment and method of clamping to use.

FIGURE 2

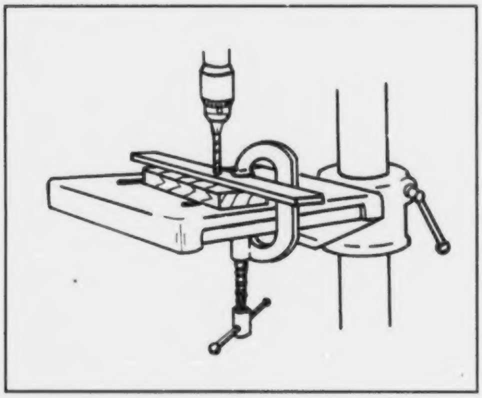
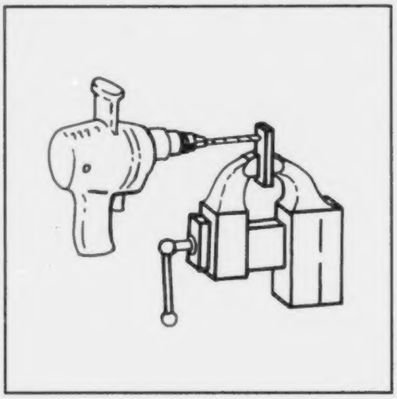


FIGURE 3

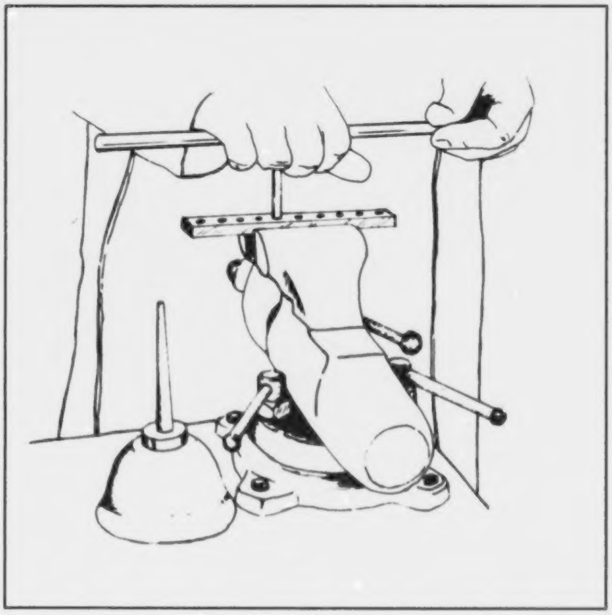


Used with permission of McGraw-Hill, Inc., from *Working in Agricultural Mechanics*, by Glenn C. Shinn and Curtis R. Weston, 1978.

	Yes	No
9. Drill hole in material.	____	____
10. Tighten the proper tap into the tap wrench.	____	____
11. Cup a hand over the tap wrench and place the tap in the hole.	____	____
12. With the tap parallel to the hole, start turning clockwise, applying a downward pressure on the tap.	____	____

☑ **NOTE:** Apply cutting fluid to the tap at the hole as required.

FIGURE 4



	Yes	No
13. Remove the tap wrench after a few threads have been cut.	____	____

☑ **NOTE:** Use a small square to check for squareness. Tap should be at a 90-degree angle from the work in all positions.

⚠ CAUTION: If the tap is not square, you will have to start over. Otherwise, the tap will ruin the thread and possibly the hole.

	Yes	No
14. Reset the tap wrench.	____	____
15. Continue turning and tapping the hole.	____	____

☑ **NOTE:** Reverse ordinary hand taps by one turn after about three turns, or when the tap gets hard to turn, to break the chips. This will remove the chips and prevent damage to the threads and the tap. When tapping a blind hole, occasionally remove the tap and clean out the hole.

	Yes	No
16. Clean the chips from the hole.	____	____
17. Check the thread with a bolt of correct dimensions.	____	____
18. Clean the work area and put away the equipment and materials.	____	____

☑ **NOTE:** Keep this strap with the tapped hole for future use.

SKILL TEST RECORD

EVALUATOR'S COMMENTS

____

____

____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Handled drill correctly	4	3	2	1
Hole drilled correctly	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

4 **Skilled** – Can perform job with no additional training.
3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required.
2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill.
1 **Unskilled** – Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

____

____

____

JOB
SHEET 3

METALWORK

F3

Name ______________________________

OBJECTIVE 17

Cut with a hand-threading die the threads on a piece of rod.

EQUIPMENT AND SUPPLIES

- Bench vise
- 4-inch steel rod of correct size to thread and screw into the tapped hole made in Job Sheet 2
- Bench grinder or file
- Die
- Die stock (wrench)
- Thread gauge
- Cutting fluid

PROCEDURE

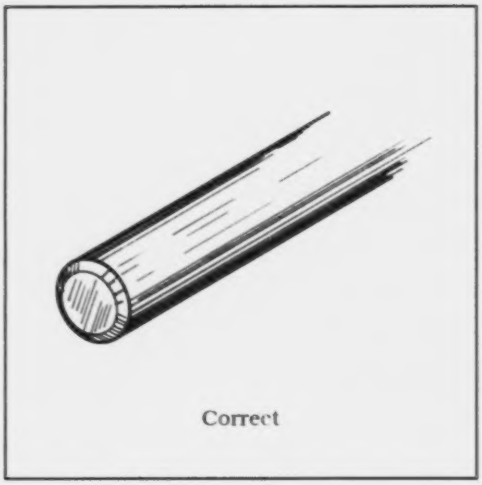
Functional Reading
- Follow written instructions

Job Acquisition/ Development
- Master specific job task/procedure
- Practice good work habits/attitudes

	Yes	No
1. Determine the size of the thread needed to match the tapped hole completed in Job Sheet 2.	____	____

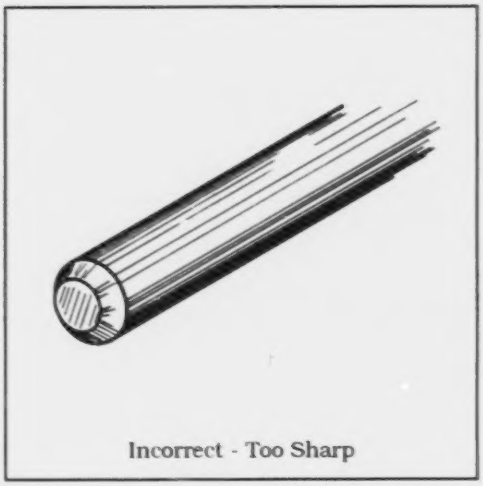
	Yes	No
2. Use the grinder or file to chamfer the end of the steel rod.	____	____

FIGURE 1



Correct

FIGURE 2



Incorrect - Too Sharp

3. Mount the rod in the vise.	____	____
4. Select the proper die and die stock.	____	____
5. Adjust the die for proper depth of cut.	____	____

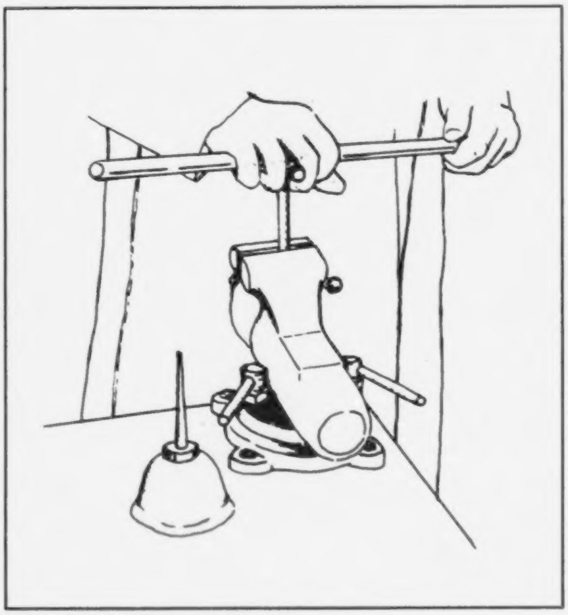
☑ **NOTE:** Depth of cut may be adjusted for a snug or free fit. Adjustment is made with setscrews in the die or holder.

6. Place the die in stock and tighten.	____	____
7. Cup your hand over the die and place it on top of the rod.	____	____

Yes No

8. Turn the die clockwise while applying downward pressure. ____ ____

FIGURE 3



9. After cutting several threads, move your hands to the ends of the die stock handles. ____ ____

☑ **NOTE:** Be sure that the die is maintained square with the work. If the die is out of square, this is called a drunken thread.

10. Apply cutting fluid to the die as required. ____ ____

11. Continue cutting threads until you have threaded 1-inch of the rod. ____ ____

☑ **NOTE:** After approximately three turns with an ordinary hand thread die, reverse the die about one-half turn. This procedure will break the chips, remove the chips, and prevent damage to the threads and the die.

12. Clean the chips from the threads. ____ ____

13. Check thread by screwing the rod into the tapped hole in the strap. ____ ____

	Yes	No
14. Clean the work area and put away the equipment and materials.	____	____

☑ **NOTE:** Turn in the completed pieces to the instructor for evaluation.

SKILL TEST RECORD

EVALUATOR'S COMMENTS

____

____

____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Handled drill correctly	4	3	2	1
Threads cut correctly	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

4 **Skilled** — Can perform job with no additional training.
3 **Moderately Skilled** — Has performed job during training program; limited additional training may be required.
2 **Limited Skill** — Has performed job during training program; additional training is required to develop skill.
1 **Unskilled** — Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

____

____

____

JOB SHEET 4 — *METALWORK* — **F3**

Name ______________________________

OBJECTIVE 18

Use a pop riveter.

EQUIPMENT AND SUPPLIES

- Pop riveter
- Pop rivets
- Vise
- Two sheet metal strips, approximately 2-inch x 6-inch x $^1/_{16}$ inch

☑ **NOTE:** Sheet metal strips should be predrilled with matching hole locations and correct hole sizes to match size of pop rivets being used.

PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/ Development
- Master specific job task/procedure
- Practice good work habits/attitudes

Yes No

1. Place metal strips in the vise so that all edges are even and the holes are matched. ____ ____
2. Insert the pop rivet mandrel fully into the pilot hole on the face of the pop riveter. ____ ____
3. Insert the rivet fully into matching holes in metal strips. ____ ____
4. Maintain pressure of rivet against metal strips while repeatedly closing and opening riveter handles. ____ ____

   ☑ **NOTE:** Repeatedly closing and opening the handles allows the jaws of the riveter to pull the mandrel. This causes the rivet to mushroom on the opposite side of the metal strips.

5. Continue riveter handle action until the mandrel breaks off. ____ ____

	Yes	No
6. Repeat the riveting process on the other set of matching holes in the metal strips.	____	____

☑ **NOTE:** When this process is completed, the metal strips will be fastened together with two rivets.

	Yes	No
7. Clean the work area and put away equipment and materials.	____	____

☑ **NOTE:** Turn in the riveted strips to your instructor for evaluation.

SKILL TEST RECORD

EVALUATOR'S COMMENTS

____

____

____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:				
Safety procedures followed	4	3	2	1
Riveting completed correctly	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

4 **Skilled** – Can perform job with no additional training.
3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required.
2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill.
1 **Unskilled** – Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

____

____

____

739

OBJECTIVE SHEET

OXY-GAS CUTTING

F4

INTRODUCTION

Oxyacetylene welding joins metal by melting it together by the heat of a torch. This general process was developed in the early 1900s. Because the equipment is portable and the amount of heat applied can be varied and controlled, oxy-gas cutting is used in many manufacturing, construction, service, and agricultural industries.

FOCUS ASSIGNMENTS

Reading Comprehension
- Gain factual information
- Analyze cause and effect
- Draw conclusions

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

Composition
- Use complete sentences

FOCUS ASSIGNMENTS

PREREADING:	Use your classroom library or your school library to find an article to read about oxy-gas cutting or careers that use this skill.
WRITING:	Write a one-page essay on how you could use this skill.

UNIT OBJECTIVE

After completing this unit, you will show the following competencies by mastering the activities on the Job Sheets and by scoring at least 85% on the Written Test.

SPECIFIC OBJECTIVES

1. Identify common types of fuel gases.
2. List the characteristics of oxygen.
3. Identify the functions of oxygen in the cutting process.
4. Identify the parts of oxy-gas cutting equipment.
5. Identify types of cutting torches.
6. Identify the parts of oxyacetylene regulators.
7. State safety precautions for handling oxy-gas equipment.
8. Name the components of a fire triangle.
9. Match types of oxyacetylene flames to their correct descriptions.
10. List the causes of backfire.
11. Arrange in order the steps to follow in case of flashback.
12. Set up, test for leaks, and depressurize oxyacetylene equipment. (Job Sheet 1).
13. Turn on, light, adjust cutting torch to a neutral flame, and turn off oxyacetylene cutting equipment. (Job Sheet 2)
14. Make 90-degree cuts on mild steel and restart a cut. (Job Sheet 3)
15. Make a flame-beveled cut on mild steel plate. (Job Sheet 4)
16. Cut a hole in mild steel. (Job Sheet 5)

INFORMATION SHEET

OXY-GAS CUTTING

F4

OBJECTIVE 1

Optional Activities/
Resources in
Instructor's Guide

Identify common types of fuel gases.

Type of Fuel Gas	Flame Temperature with Oxygen	Characteristics	Place and Frequency of Use
Acetylene	6300°F	Unstable under pressures over 15 psi Most efficient oxygen consumption as related to flame temperature Distinct odor Colorless	Most common in schools Most versatile for gas welding operations
Mapp	6000°F	Stable Second most efficient oxygen consumption as related to flame temperature Distinct odor Colorless	Increasing use in industry
Propane	5300°F	Stable Poor oxygen consumption efficiency rating as related to flame temperature Suitable for heating and cutting operations ☑ **NOTE:** Propane cannot be used for welding operations. Distinct odor Colorless	Easily accessible and commonly used on many farms and rural areas
Natural	4600°F	Stable Poor oxygen consumption efficiency and low-temperature flame Colorless	Limited industrial use because of its inaccessibility

OBJECTIVE 2

Optional Activities/
Resources in
Instructor's Guide

List the characteristics of oxygen.

- colorless
- odorless
- tasteless
- supports and intensifies combustion

OBJECTIVE 3

Optional Activities/
Resources in
Instructor's Guide

Identify the functions of oxygen in the cutting process.

WORDS YOU SHOULD KNOW	
oxidize	to combine with oxygen

- Combines with fuel gas to intensify flame temperature
- Combines with iron in ferrous metals to oxidize iron

  ☑ **NOTE:** Oxidized iron, like anything oxidized, is burned up or consumed.

- Blows out melted metal to speed the cutting process

  ☑ **NOTE:** Some of the metal is removed by oxidizing. The rest is actually blown out by the high pressure of the oxygen when the cutting lever is pressed.

OBJECTIVE 4

Required Activities/
Resources
- Transparency Masters 1, 2, & 3

Optional Activities/
Resources in
Instructor's Guide

Identify the parts of oxy-gas cutting equipment.

You will see transparencies showing the individual parts of oxy-gas cutting equipment.

WORDS YOU SHOULD KNOW

cylinder	portable, round container used to transport and store compressed gas
cylinder valve	valve installed in top of cylinder to turn on and off the flow of gas from the cylinder
oxy-gas cutting	group of cutting processes in which metal is cut by the chemical reaction of oxygen with the base metal at a high temperature produced by a gas flame burned with oxygen
oxyacetylene cutting	most common type of oxy-gas cutting; uses acetylene as the fuel gas

FIGURE 1

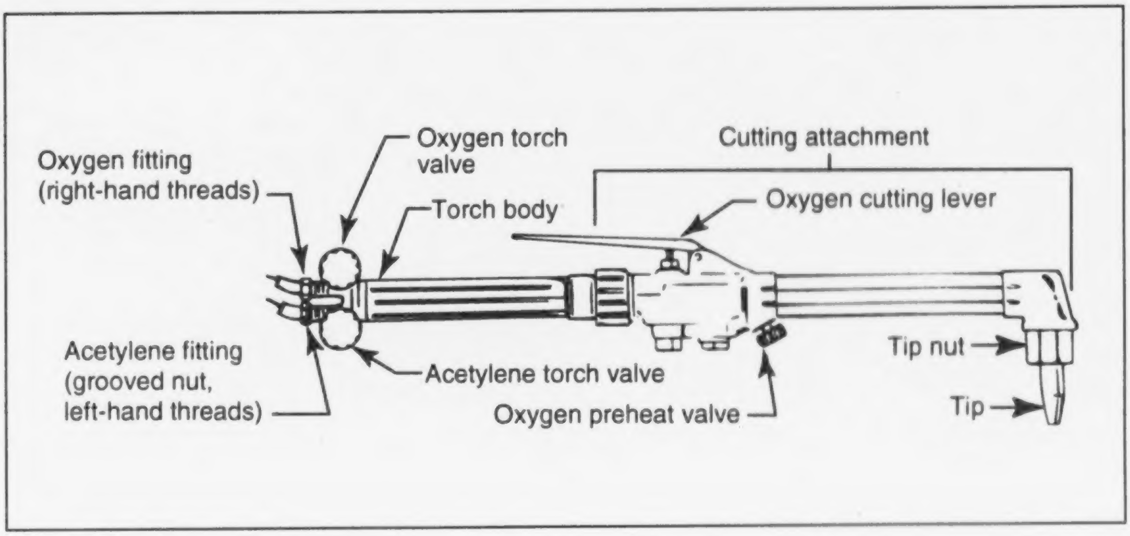

Oxygen fitting
(right-hand threads)
Oxygen torch
valve
Torch body
Cutting attachment
Oxygen cutting lever
Acetylene fitting
(grooved nut,
left-hand threads)
Acetylene torch valve
Oxygen preheat valve
Tip nut
Tip

FIGURE 2

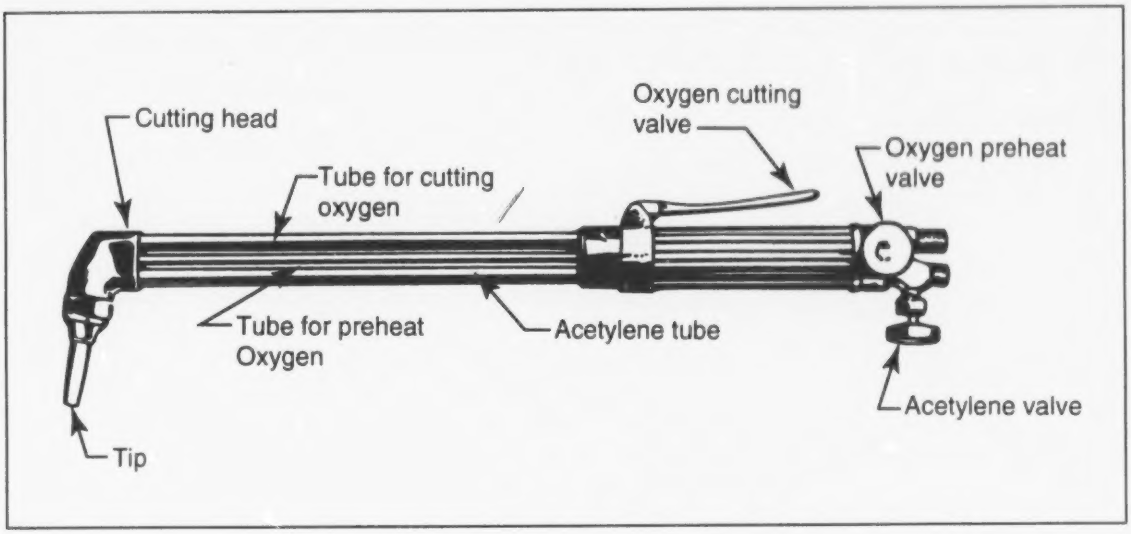
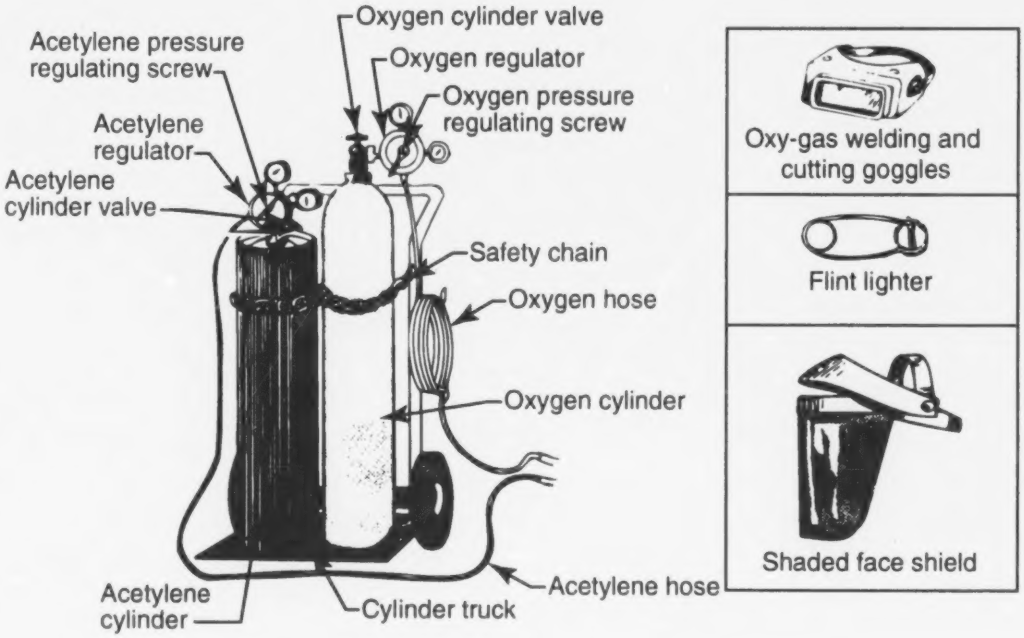

Cutting head
Tube for cutting
oxygen
Oxygen cutting
valve
Oxygen preheat
valve
Tube for preheat
Oxygen
Acetylene tube
Acetylene valve
Tip

FIGURE 3


Oxygen cylinder valve
Acetylene pressure regulating screw
Oxygen regulator
Oxygen pressure regulating screw
Acetylene regulator
Acetylene cylinder valve
Safety chain
Oxygen hose
Oxygen cylinder
Acetylene cylinder
Cylinder truck
Acetylene hose
Oxy-gas welding and cutting goggles
Flint lighter
Shaded face shield

OBJECTIVE 5

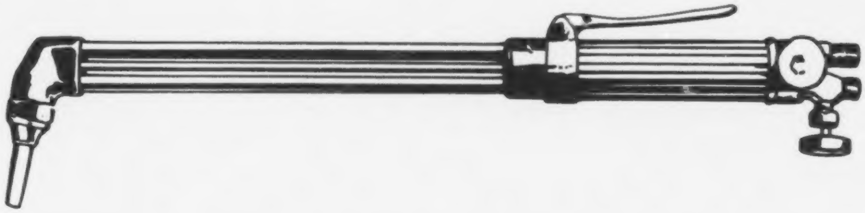
Optional Activities/
Resources in
Instructor's Guide

Identify types of cutting torches.

☑ **NOTE:** Different types of tips are required for the different fuel gases and torches. Tip sizes also vary, based upon the cutting job to be performed. Manufacturers make size recommendations for their particular equipment.

- Single-unit cutting torch

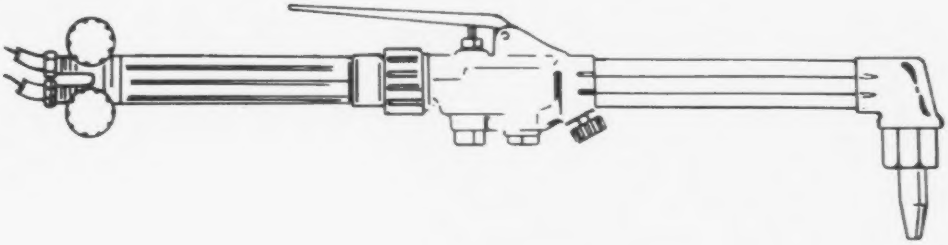
FIGURE 4



- Two-piece cutting torch assembly

  ☑ **NOTE:** On this type of assembly, the cutting attachment can be removed from the torch body and replaced by a welding tip, thereby creating a dual-purpose piece of equipment.

FIGURE 5



OBJECTIVE 6

Required Activities/
Resources
- Transparency Masters 4, & 5

Optional Activities/
Resources in
Instructor's Guide

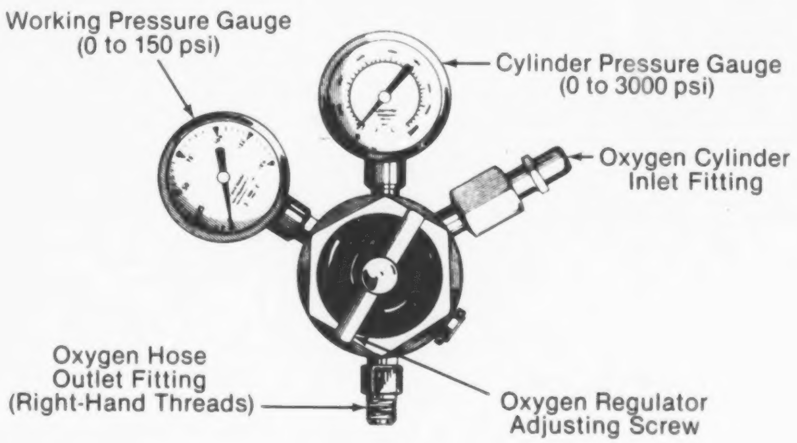
Identify the parts of oxyacetylene regulators.

You will see a transparency showing individual parts of a regulator.

WORDS YOU SHOULD KNOW	
regulator	tool attached to cylinder; controls gas flow at a constant rate; has two gauges, one that shows pressure in the cylinder and one that shows working pressure going to the torch

- oxygen regulator

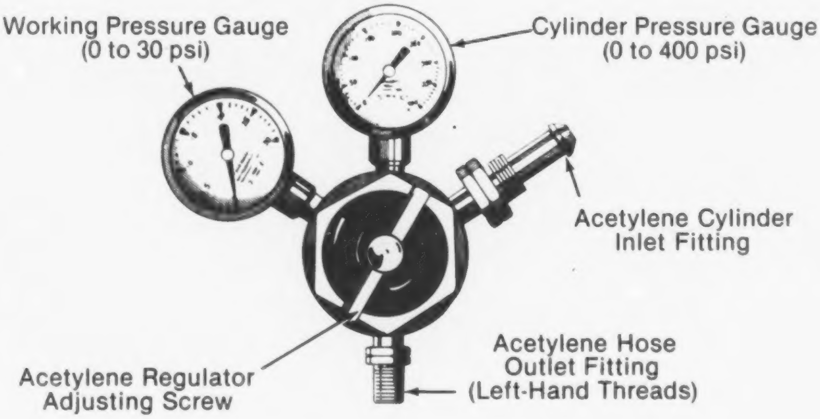
FIGURE 6


Working Pressure Gauge
(0 to 150 psi)
Cylinder Pressure Gauge
(0 to 3000 psi)
Oxygen Cylinder
Inlet Fitting
Oxygen Hose
Outlet Fitting
(Right-Hand Threads)
Oxygen Regulator
Adjusting Screw

- acetylene regulator

☑ **NOTE:** An acetylene regulator can be used for other types of fuel gases in oxy-cutting operations.

FIGURE 7


Working Pressure Gauge
(0 to 30 psi)
Cylinder Pressure Gauge
(0 to 400 psi)
Acetylene Cylinder
Inlet Fitting
Acetylene Hose
Outlet Fitting
(Left-Hand Threads)
Acetylene Regulator
Adjusting Screw

☑ **NOTE:** As an added safety precaution to prevent flames from flashbacks and backfires from entering regulators and cylinders, check valves can be added between the hose and regulator connection.

FIGURE 8

Oxygen Reverse-Flow
Check Valve

FIGURE 9

Acetylene Reverse-Flow
Check Valve

OBJECTIVE 7

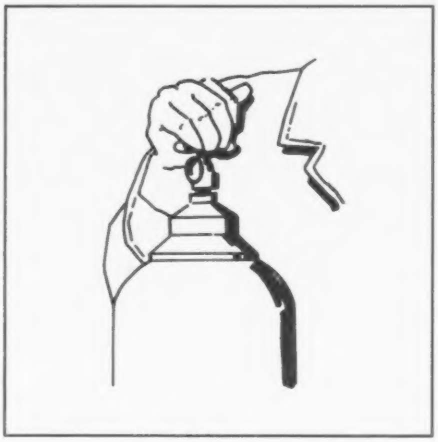
Optional Activities/
Resources in
Instructor's Guide

State safety precautions for handling oxy-gas equipment.

WORDS YOU SHOULD KNOW	
purge	process of forcing gases through the hoses and cutting torch to remove foreign material or impurities

- Before attaching regulators, blow out the cylinder valve by opening and closing the valve quickly.

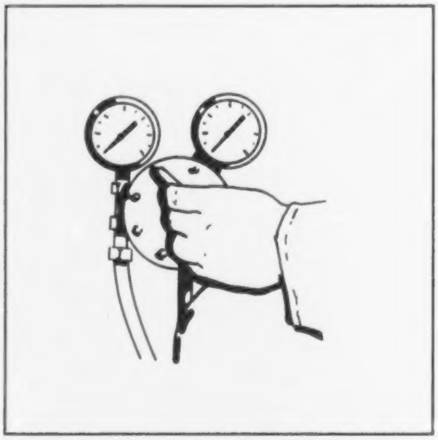
FIGURE 10



Used with permission of Smith Welding Equipment, a division of Tescom Corporation

- Before opening the cylinder valves, check to make sure that the adjusting screws on the regulators are loose.

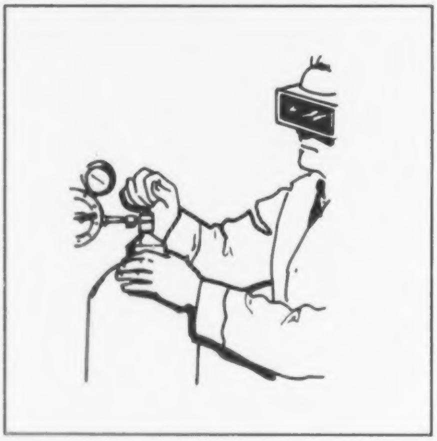
FIGURE 11



Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

- Stand to one side of the regulator when opening the cylinder valve.

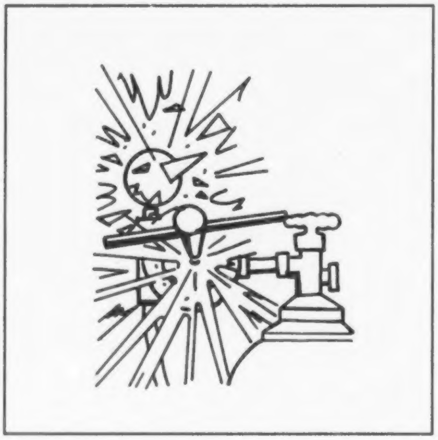
FIGURE 12



Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

- Open cylinder valve slowly to prevent explosions.

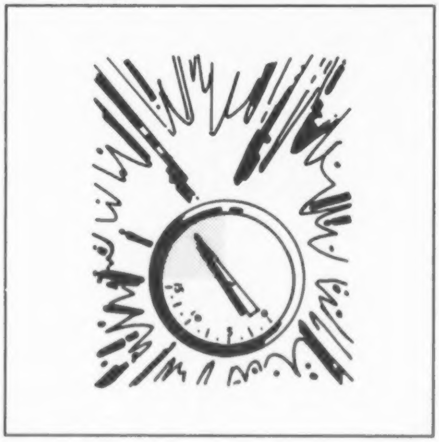
FIGURE 13



Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

- Do not use or compress acetylene (in free state) at pressures greater than 15 pounds per square inch (psi).

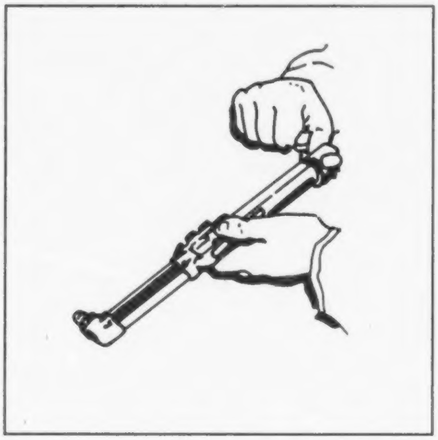
FIGURE 14



Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

- Purge oxygen and fuel-gas passages individually before lighting torches.

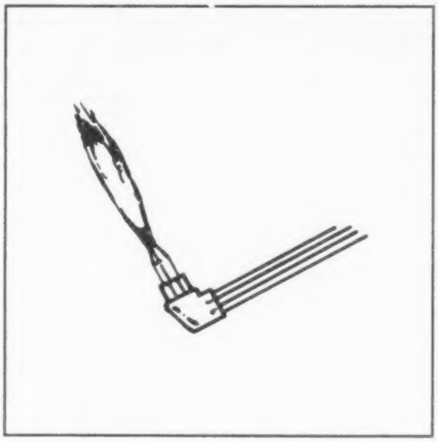
FIGURE 15



Used with permission of Smith Welding Equipment, a division of Tescom Corporation

- Light the fuel gas before opening oxygen valve on the torch.

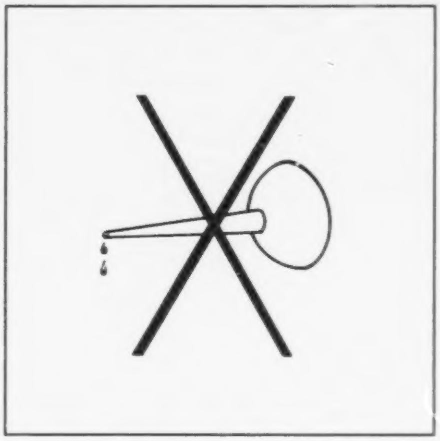
FIGURE 16



Used with permission of Smith Welding Equipment, a division of Tescom Corporation

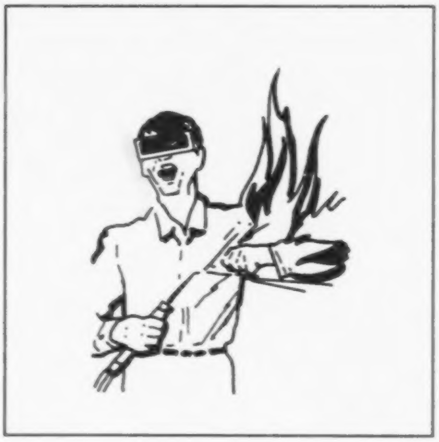
- Never use oil or grease on regulators, torches, fittings, or other equipment in contact with oxygen.

FIGURE 17



- Never use oxygen as a substitute for compressed air.

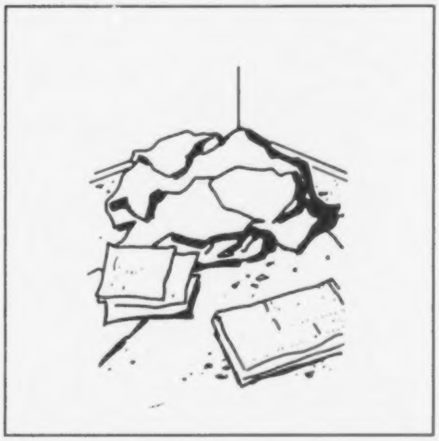
FIGURE 18



Used with permission of Smith Welding Equipment, a division of Tescom Corporation

- Keep combustible materials away from cutting areas.

  FIGURE 19

  Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

- Always wear leather welding and cutting gloves.

  CAUTION: Never handle hot materials with the gloves, as this hardens the leather and causes the gloves to lose their flexibility and usability.

- Wear oxy-gas welding and cutting goggles.

  ☑ **NOTE:** The suggested shade range for oxy-gas cutting is 3 through 6.

- Wear protective clothing to protect all parts of the body.

  EXAMPLES: Long sleeved non synthetic shirt, trousers with no cuffs and no frays, high-topped leather shoes or boots.

- Never cut containers that have been used for combustible materials.

- Avoid breathing toxic fumes when cutting.

  EXAMPLE: Fumes from galvanized metal

- Always place steel caps on the cylinders when they are being moved or are in storage.

- Always use a flint lighter to light the torch.

- Always protect hoses from hot slag, hot metal, or mechanical damage.
- Always operate torch in a well-ventilated area.
- Always support or store cylinders in an upright position.

OBJECTIVE 8

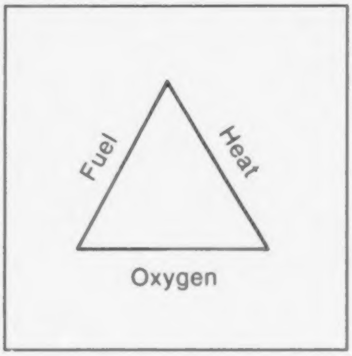
Required Activities/
Resources
- Transparency Master 6

Optional Activities/
Resources in
Instructor's Guide

Name the components of a fire triangle.

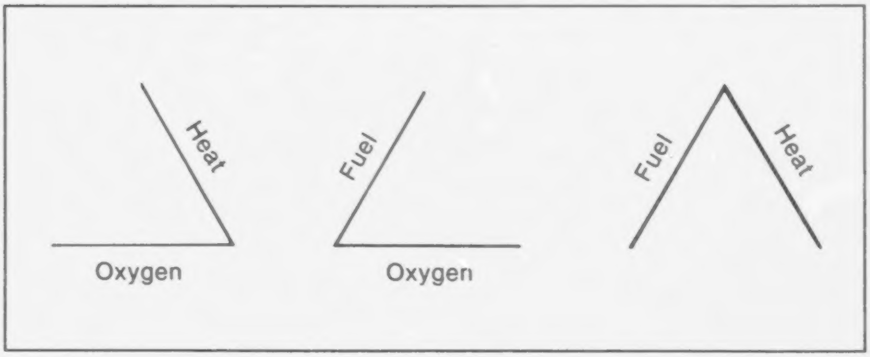
You will see a transparency showing the fire triangle.

FIGURE 20



☑ **NOTE:** To produce fire, all three elements are necessary and must be present at the same time. If any one of the three is missing, a fire cannot be started. With the removal of fuel, heat, or oxygen, the fire will be extinguished.

FIGURE 21



OBJECTIVE 9

Required Activities/
Resources
- Transparency Master 7

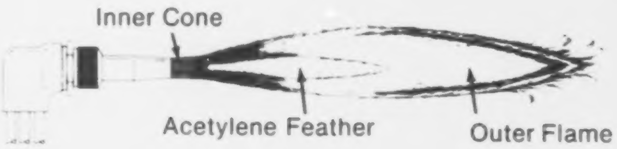
Optional Activities/
Resources in
Instructor's Guide

Match types of oxyacetylene flames to their correct descriptions.

You will see a transparency showing types of flames.

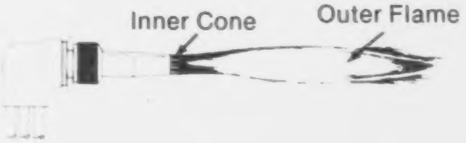
- carburizing flame
  - ☐ has excess acetylene gas in the flame
  - ☐ shows acetylene feather burning around inner cone
  - ☐ burns extra acetylene, thus causing metal to become brittle

FIGURE 22



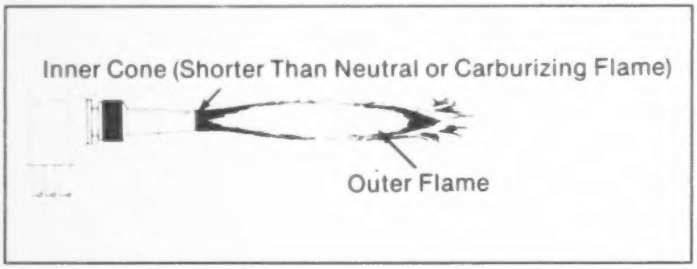
- neutral flame
  - ☐ has sharp inner cone
  - ☐ does not show acetylene feather
  - ☐ burns equal parts of gases from cylinders

FIGURE 23



- oxidizing flame
  - has excess oxygen in flame
  - has short inner cone, and makes whistling sound
  - burns metal, causing it to become brittle

FIGURE 24



OBJECTIVE 10

Optional Activities/
Resources in
Instructor's Guide

List the causes of backfire.

WORDS YOU SHOULD KNOW	
backfire	condition in which flame momentarily burns back into top; characterized by a loud snap or pop and the flame either going out or continuing to burn

☑ **NOTE:** If a torch backfires, notify your instructor so that the condition can be corrected.

- insufficient pressure of fuel gas or oxygen
- loose cutting tip
- dirty tip
- overheating of cutting tip caused by bringing the top too close to molten puddle
- bad O-ring in torch body
- too large a tip used in conjunction with a small fuel-gas cylinder

OBJECTIVE 11

Required Activities/
Resources
– Discussion

Optional Activities/
Resources in
Instructor's Guide

Arrange in order the steps to follow in case of flashback.

Start a discussion by asking "Why is flashback dangerous?"

WORDS YOU SHOULD KNOW	
flashback	dangerous condition in which flame burns back inside the torch body; characterized by a hissing sound and smoke and/or sparks emitted from the torch tip

NOTE: If heavy smoke comes out of the torch tip and the torch body becomes hot, the flashback has probably traveled past the mixing chamber into the hose. In this case, shut off the oxygen cylinder valve and the fuel-gas cylinder valve, and then notify your instructor.

1. Close the fuel-gas torch valve.
2. Close the oxygen preheat valve.
3. Close the oxygen torch valve.
4. Release the oxygen regulator screw.
5. Release the fuel-gas regulator screw.
6. Examine the fuel-gas unit.
7. Reset the regulator pressures.
8. Light the torch.

JOB SHEET 1 — OXY-GAS CUTTING

F4

Name ____

OBJECTIVE 12

Set up, test for leaks, and depressurize oxyacetylene equipment.

EQUIPMENT AND SUPPLIES

- Oxygen
- Acetylene cylinder
- Oxygen regulator
- Acetylene regulator
- Hoses
- Wrench
- Cylinder truck
- Water container
- Soapsuds
- Clean paintbrush
- Torch body with cutting attachment
- Tip selection guide

PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/ Development
- Master specific job task/procedure
- Practice good work habits/attitudes

☑ **NOTE:** Safety glasses or goggles should be worn in the shop at all times.

	Yes	No
1. Fasten cylinders in a vertical position in the cylinder truck or in a permanent location.	____	____
2. Remove caps from the cylinders.	____	____
3. Blow out valves of each cylinder, then quickly close the valves.	____	____

Yes No

4. Connect the oxygen regulator to the oxygen cylinder. ____ ____

   a. Turn adjusting screw on the regulator counterclockwise until tension on the spring is released.

   b. Slowly turn the cylinder valve wide open while standing to one side of the regulator.

5. Connect the acetylene regulator to the acetylene cylinder. ____ ____

   a. Turn the adjusting screw on the regulator counterclockwise until tension on the spring is released.

   b. Open the cylinder valve one-half to three-quarters of a turn.

6. Connect the acetylene hose to the acetylene regulator, and purge the hose by turning the regulator adjusting screw clockwise until the gas flows through the hose. Then quickly loosen the regulator adjusting screw. ____ ____

7. Repeat this procedure with the oxygen regulator and hose. ____ ____

8. Connect the torch body to the oxygen and acetylene hoses, and close both valves on the torch body. ____ ____

9. Attach the cutting attachment to the torch body. ____ ____

   ☑ **NOTE:** The tip size is determined by the thickness of the metal to be cut and the manufacturer's recommendations.

10. Close oxygen preheat valve on the cutting attachment. ____ ____

11. Turn the adjusting screw on the oxygen regulator clockwise until working pressure is reached. ____ ____

	Yes	No
12. Turn the adjusting screw on the acetylene regulator clockwise until the correct working pressure is reached.	____	____
13. Test all connections for leaks with soapsuds and water.	____	____
a. Apply soapsuds with a clean paintbrush to all connections.		
b. If any bubbles occur as a result of leaks, notify your instructor immediately.		
14. Close the acetylene cylinder valve.	____	____
15. Close the oxygen cylinder valve.	____	____
16. Open the acetylene valve on the torch.	____	____
17. Close the acetylene valve on the torch when gauges reach zero.	____	____
18. Release the adjusting screw on the acetylene regulator by turning counterclockwise.	____	____
19. Open the oxygen preheat valve on the torch.	____	____
20. Close the oxygen preheat valve on the torch when the gauges reach zero.	____	____
21. Release the adjusting screw on the oxygen regulator by turning counterclockwise.	____	____
22. Close the oxygen valve on the torch.	____	____
23. Place torch and hose on the hanger or brackets provided.	____	____
24. Clean the work area and put away the equipment and materials.	____	____

SKILL TEST RECORD

EVALUATOR'S COMMENTS

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Regulators attached	4	3	2	1
Hoses attached properly	4	3	2	1
Torch attached properly	4	3	2	1
Opened and closed valves properly	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING	**Evaluator note:** To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.
KEY	4 **Skilled** – Can perform job with no additional training. 3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required. 2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill. 1 **Unskilled** – Is familiar with process, but is unable to perform job.
EVALUATOR'S COMMENTS	______________________________ ______________________________ ______________________________

JOB SHEET 2

OXY-GAS CUTTING

F4

Name ______________________________

OBJECTIVE 13

Turn on, light, adjust cutting torch to a neutral flame, and turn off oxyacetylene cutting equipment.

EQUIPMENT AND SUPPLIES

- Cutting outfit with tip assembly
- Flint lighter
- Wrench
- Leather gloves
- Shaded welding goggles or shaded face shield
- Coveralls or protective clothing
- Tip selection guide

PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/Development
- Master specific job task/procedure
- Practice good work habits/attitudes

☞ **NOTE:** Safety glasses or goggles should be worn in the shop at all times.

	Yes	No
1. Check all cylinder, regulator, and torch valves to make sure that they are off.	____	____
2. Open the acetylene cylinder valve one-half to three-quarters of a turn.	____	____

⚠ CAUTION: Never open acetylene cylinder valve more than one and one-half turns.

	Yes	No
3. Open the acetylene valve on the torch one turn.	____	____
4. Turn adjusting screw on the acetylene regulator clockwise until the desired pressure is reached.	____	____

☞ **NOTE:** Oxygen and acetylene pressures and tip size depend upon the thickness of the metal to be cut. Use pressures and tip size recommended by manufacturer.

		Yes	No
5.	Close the acetylene valve on the torch.	____	____
6.	Open the oxygen cylinder valve all the way.	____	____
7.	Open the oxygen torch valve all the way.	____	____
8.	Open the oxygen preheat valve on the cutting attachment one turn.	____	____
9.	Turn the adjusting screw on the oxygen regulator clockwise until the desired pressure is reached.	____	____
10.	Close the oxygen preheat valve on the cutting attachment.	____	____
11.	Open the acetylene valve on the torch one-quarter turn.	____	____
12.	Light the torch with a flint lighter, and adjust until the smoke on the flame clears.	____	____
13.	Open the oxygen preheat valve slowly and adjust to a neutral flame.	____	____
14.	Depress oxygen cutting lever and check to see that a neutral flame is present.	____	____
	☑ **NOTE:** If necessary, adjust the oxygen preheat valve with the oxygen cutting lever depressed until a neutral flame is secured.		
15.	Close the acetylene valve on the torch.	____	____
16.	Close the oxygen preheat valve.	____	____
17.	Close the acetylene cylinder valve.	____	____
18.	Close the oxygen cylinder valve.	____	____
19.	Open the acetylene valve on the torch.	____	____
20.	Close the acetylene valve on the torch when the gauges reach zero.	____	____

	Yes	No
21. Release the adjusting screw on the acetylene regulator by turning counterclockwise.	____	____
22. Open the oxygen preheat valve on the torch.	____	____
23. Close the oxygen preheat valve on the torch when the gauges reach zero.	____	____
24. Release the adjusting screw on the oxygen regulator by turning counterclockwise.	____	____
25. Close the oxygen valve on the torch.	____	____
26. Place the torch and hose on the hanger or brackets provided.	____	____
27. Clean the work area, and put away the equipment and materials.	____	____

SKILL TEST RECORD

EVALUATOR'S COMMENTS

____

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PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Torch lit properly	4	3	2	1
Torch turned off correctly	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

4 **Skilled** – Can perform job with no additional training.
3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required.
2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill.
1 **Unskilled** – Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

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JOB SHEET 3

OXY-GAS CUTTING

F4

Name ______________________________

OBJECTIVE 14

Make 90-degree cuts on mild steel and restart a cut.

EQUIPMENT AND SUPPLIES

- Cutting outfit with tip assembly

  ☑ **NOTE:** Check with the instructor or the manufacturer's recommendations for correct tip size.

- Tip selection guide
- Mild steel plate, $^{1}/_{4}$ inch to $^{1}/_{2}$ inch thick, at least 4 inches wide and 8 inches long
- Soapstone with a sharp point or edge
- Straightedge
- Leather gloves
- Shaded welding goggles
- Pliers
- Coveralls or protective clothing
- Flint lighter
- Welding or cutting table
- Slag box
- Can of water

PROCEDURE

☑ **NOTE:** Safety glasses or goggles should be worn in the shop at all times.

Functional Reading
- Follow written instructions

Job Acquisition/Development
- Master specific job task/procedure
- Practice good work habits/attitudes

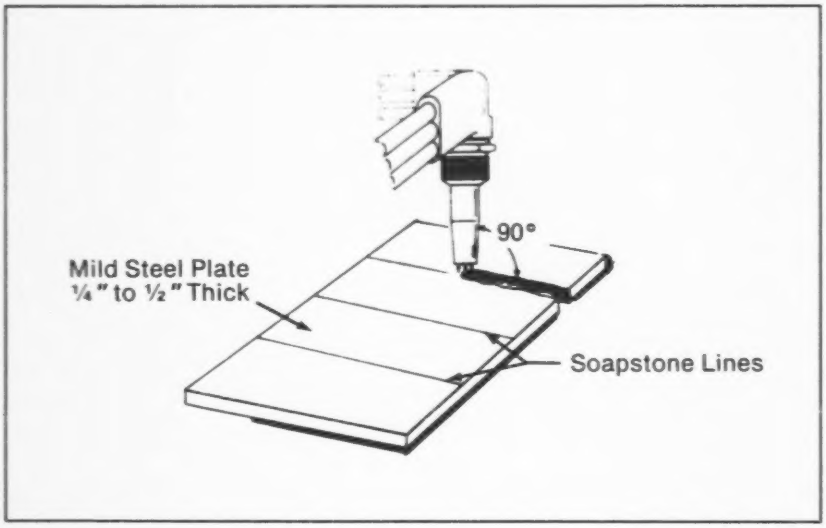
	Yes	No
1. Using soapstone and straightedge, mark three parallel lines 2 inches apart on the plate to be cut.	____	____
2. Turn on the oxyacetylene rig and adjust the working pressures until the desired pressure is reached.	____	____

☑ **NOTE:** Working pressures depend on the tip size and thickness of the metal to be cut. Use pressures and tip size recommended by the manufacturer.

	Yes	No
3. Place the plate to be cut over the slag box.	____	____
4. Light the torch.	____	____
5. Adjust to neutral flame.	____	____
6. Place hoses behind you and assume a comfortable position.	____	____
7. Maneuver the torch with both hands.	____	____
8. Hold the preheat flame with the tip of the inner cone $^1/_{16}$ inch to $^1/_8$ inch above the top of the plate at the right edge until a red spot appears.	____	____
9. Depress the oxygen cutting lever, and move from the right to the left across the plate.	____	____

☑ **NOTE:** Left-handed operators move from left to right.

FIGURE 1



10. While cutting, hold the tip at a right angle to work, with the inner cone $^1/_{16}$ inch to $^1/_8$ inch above work.	____	____

	Yes	No
11. Make 90-degree cuts until you have developed the proper procedure.	____	____
12. Restart a cut.	____	____
a. Release the oxygen cutting lever.		
b. Preheat only the edge where cutting action was stopped.		
c. Slowly depress the oxygen cutting lever and continue cut.		
d. Repeat the procedure until you have developed proper skill.		
13. Turn off the flame.	____	____
14. Cool the metal by picking it up with pliers and placing it in a can of water.	____	____
15. Show work to instructor for approval and grading.	____	____
16. After the instructor's approval, depressurize the oxyacetylene equipment.	____	____
17. Clean the work area and put away the equipment and materials.	____	____

SKILL TEST RECORD

EVALUATOR'S COMMENTS

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PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
90 degree cut completed	4	3	2	1
Cut restarted	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

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2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill.
1 **Unskilled** – Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

JOB SHEET 4

OXY-GAS CUTTING

F4

Name ________________________________

OBJECTIVE 15

Make a flame-beveled cut on mild steel plate.

EQUIPMENT AND SUPPLIES

- Cutting outfit with tip assembly
- Mild steel plate, $^{1}/_{4}$ inch to $^{1}/_{2}$ inch thick, at least 4 inches wide and 8 inches long
- Leather gloves
- Shaded welding goggles
- Pliers
- Coveralls or protective clothing
- Flint lighter
- Welding or cutting table
- Slag box
- Can of water
- Tip selection guide

☑ **NOTE:** Safety glasses or goggles should be worn in the shop at all times.

PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/ Development
- Master specific job task/procedure
- Practice good work habits/attitudes

Yes No

1. Place a piece of mild steel plate on the slag box or cutting table. ____ ____

2. Light cutting torch and adjust to a neutral flame. ____ ____

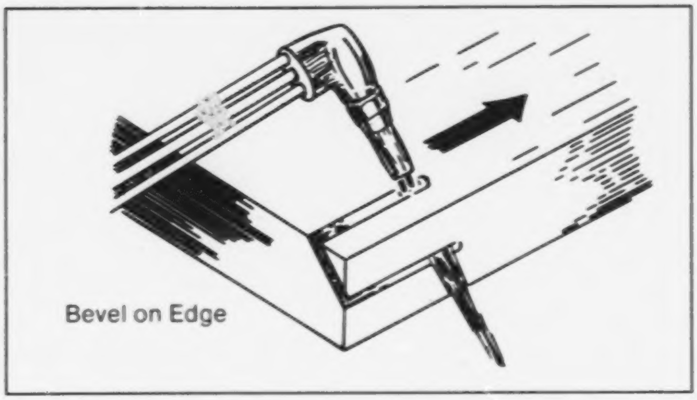
   ☑ **NOTE:** Oxygen cutting pressures are greater for bevel cuts than for 90-degree cuts. Follow manufacturer's recommendations.

3. Place the hoses behind you and assume a comfortable position. ____ ____

Yes No

4. Hold the torch with both hands and at the desired angle to the metal. ____ ____

FIGURE 1



5. Hold preheat flame with tip of inner cone (neutral flame) $^1/_{16}$ inch to $^1/_8$ inch above top of plate until bright red spot appears. ____ ____

6. Depress the oxygen cutting lever and proceed across the plate with very constant movement being careful to maintain constant travel speed, torch angle, and flame to work distance. ____ ____

8. Turn off the flame. ____ ____

9. Cool the metal by picking it up with pliers and placing it in a can of water. ____ ____

10. Show your work to the instructor for approval and grading. ____ ____

11. After the instructor's approval is received, depressurize the oxyacetylene equipment. ____ ____

12. Clean the work area and put away the equipment and materials. ____ ____

SKILL TEST RECORD

EVALUATOR'S COMMENTS

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PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Metal cut correctly	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

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1 **Unskilled** – Is familiar with process, but is unable to perform job.

EVALUATOR'S COMMENTS

JOB SHEET 5

OXY-GAS CUTTING

F4

Name ______________________________

OBJECTIVE 16

Cut a hole in mild steel.

EQUIPMENT AND SUPPLIES

- Cutting outfit with tip assembly
- Mild steel plate, $^1/_4$ inch to $^1/_2$ inch thick, at least 4 inches wide and 8 inches long
- Soapstone
- Leather gloves
- Shaded welding goggles
- Pliers
- Coveralls or protective clothing
- Flint lighter
- Welding or cutting table
- Slag box
- Can of water
- Tip selection guide

PROCEDURE

Functional Reading
- Follow written instructions

Job Acquisition/Development
- Master specific job task/procedure
- Practice good work habits/attitudes

☞ **NOTE:** Safety glasses or goggles should be worn in the shop at all times.

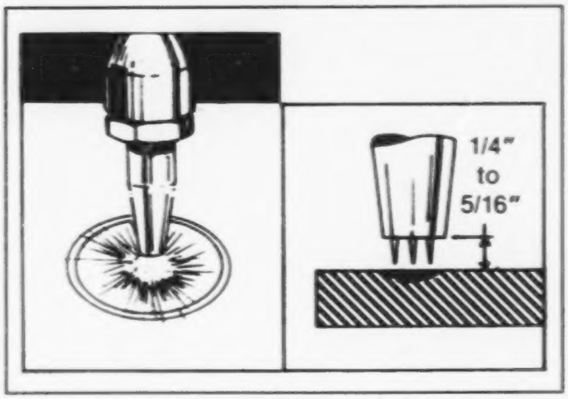
	Yes	No
1. Use the soapstone to draw a circle on metal approximately 1 inch in diameter and 1 inch from the edge.	____	____
2. Adjust the oxygen regulator.	____	____
3. Adjust the acetylene regulator.	____	____
4. Place the metal to be cut over the slag box.	____	____
5. Light the torch.	____	____
6. Adjust to neutral flame.	____	____
7. Place the hoses behind you and assume a comfortable position.	____	____

Yes No

8. Maneuver torch with both hands. ____ ____

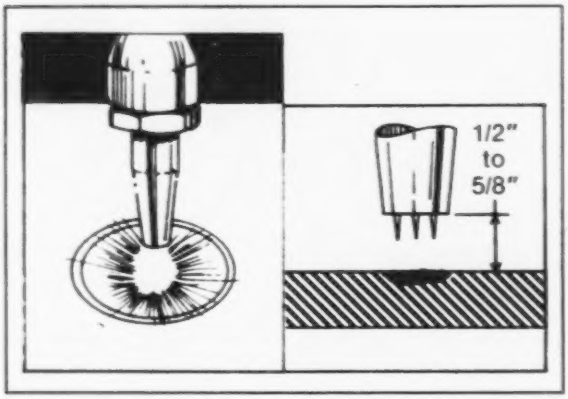
9. Hold the tip of the inner cone $^1/_{16}$ inch to $^1/_8$ inch above the point to be cut until the metal turns bright red. ____ ____

FIGURE 1



10. Raise the tip slightly as a molten puddle begins to form. ____ ____

FIGURE 2

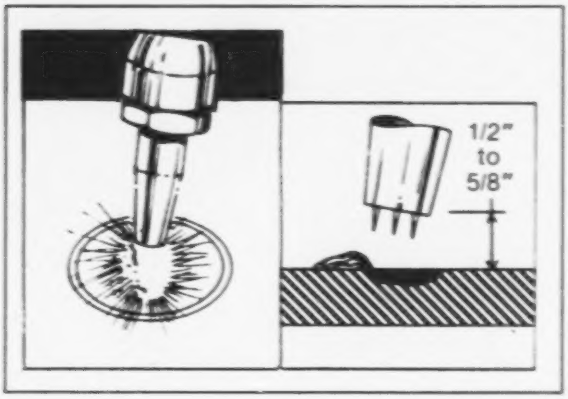


Yes No

11. Tilt the torch 15 degrees from vertical position. ____ ____

☑ **NOTE:** Tilting the torch allows molten metal to be blown away from the operator.

FIGURE 3



12. Depress the oxygen cutting lever slowly moving torch backwards (to your right if you are right-handed) until cut pierces plate. ____ ____

13. Cut just inside the soapstone mark until the circular cut is completed. ____ ____

14. Turn off the flame. ____ ____

15. Cool the metal by picking it up with pliers and placing it in a can of water. ____ ____

16. Show your work to your instructor for approval and grading. ____ ____

17. If additional practice is needed, repeat steps 1 through 16. ____ ____

18. After receiving your instructor's approval, depressurize the oxyacetylene equipment. ____ ____

19. Clean the work area and put away the equipment and materials. ____ ____

SKILL TEST RECORD

EVALUATOR'S COMMENTS

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Key below.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Safety procedures followed	4	3	2	1
Hole cut correctly	4	3	2	1
Equipment replaced	4	3	2	1
Work area cleaned	4	3	2	1

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the points in Product Evaluation and divide by the total number of criteria. Circle the rating on the Key.

KEY

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EVALUATOR'S COMMENTS